

11/628659

\*\*\*\*\* QUERY RESULTS \*\*\*\*\*

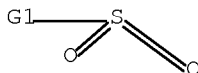
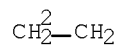
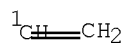
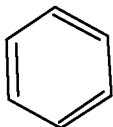
=> d his l31

(FILE 'HCAPLUS' ENTERED AT 08:14:20 ON 17 APR 2009)  
L31 24 S L26 OR L30  
SAVE TEMP L31 HAM659HCAP/A

FILE 'STNGUIDE' ENTERED AT 08:17:26 ON 17 APR 2009

=> d que l31

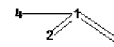
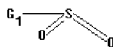
L2 STR



G1 [01], [02]

Structure attributes must be viewed using STN Express query preparation:

Uploading L2.str



chain nodes :  
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ring nodes :  
12 13 14 15 16 17  
chain bonds :  
1-2 1-3 1-4 5-6 7-8  
ring bonds :

11/628659

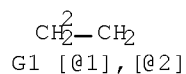
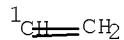
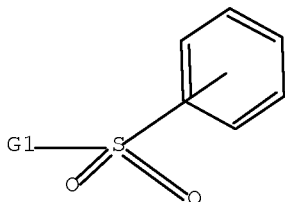
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exact/norm bonds :  
1-2 1-3 1-4  
exact bonds :  
5-6 7-8  
normalized bonds :  
12-13 12-17 13-14 14-15 15-16 16-17

G1:[\*1],[\*2]

Match level :

1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS 6:CLASS 7:CLASS 8:CLASS 12:CLASS  
13:Atom 14:Atom 15:Atom 16:Atom 17:Atom

L4 320388 SEA FILE=REGISTRY SSS FUL L2  
L5 STR



Structure attributes must be viewed using STN Express query preparation:

Uploading L3.str



chain nodes :

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1  2  3  4  5  6  7  8
ring nodes :
12 13 14 15 16 17
chain bonds :
1-2 1-3 1-4 5-6 7-8
ring bonds :
12-13 12-17 13-14 14-15 15-16 16-17
exact/norm bonds :
1-2 1-3 1-4
exact bonds :
5-6 7-8
normalized bonds :
12-13 12-17 13-14 14-15 15-16 16-17

```

G1:[\*1],[\*2]

Match level :

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1:CLASS  2:CLASS  3:CLASS  4:CLASS  5:CLASS  6:CLASS  7:CLASS  8:CLASS 12:CLASS
13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom

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L7      81379 SEA FILE=REGISTRY SUB=L4 SSS FUL L5
L8      15842 SEA FILE=HCAPLUS ABB=ON PLU=ON L7
L9      106 SEA FILE=HCAPLUS ABB=ON PLU=ON L8 AND 45/SC,SX
L10     25967 SEA FILE=HCAPLUS ABB=ON PLU=ON LEATHER+OLD,UF/CT
L11     52 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND L10
L13     67221 SEA FILE=HCAPLUS ABB=ON PLU=ON (DYE# OR DYEING#) (2A)
          (REACT? OR AZO? OR POLYAZO?)
L15     50 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 AND L13
L16     50 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 AND L10
L17     50 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 AND (LEATHER?)
L18     50 SEA FILE=HCAPLUS ABB=ON PLU=ON L16 OR L17
L19     47 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 AND (AY<2005 OR PY<2005
          OR PRY<2005)
L21     4291 SEA FILE=HCAPLUS ABB=ON PLU=ON "REACTIVE DYEING"+OLD/CT
L22     7828 SEA FILE=HCAPLUS ABB=ON PLU=ON REACTIVE (L) DYEING
L24     15 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 AND L21
L25     24 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 AND L22
L26     24 SEA FILE=HCAPLUS ABB=ON PLU=ON L24 OR L25
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          BI OR 88-63-1/BI OR 90-20-0/BI OR 108-45-2/BI OR 110-16-7/BI
          OR 110-17-8/BI OR 145017-98-7/BI OR 174491-68-0/BI OR 3029-64-9
          /BI OR 41261-80-7/BI OR 59-67-6/BI OR 675-14-9/BI OR 68-11-1/BI
          OR 6915-15-7/BI OR 697-83-6/BI OR 71902-16-4/BI OR 77-92-9/BI
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          OR 108-05-4/BI OR 108-31-6/BI OR 108-46-3/BI OR 109-01-3/BI
          OR 109-55-7/BI OR 109-76-2/BI OR 109295-78-5/BI OR 109295-80-9/
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11/628659

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-2/BI OR 149124-66-3/BI OR 149124-67-4/B

L28 267 SEA FILE=REGISTRY ABB=ON PLU=ON L27 AND N/ELS  
L29 209186 SEA FILE=HCAPLUS ABB=ON PLU=ON L28  
L30 24 SEA FILE=HCAPLUS ABB=ON PLU=ON L26 AND L29  
L31 24 SEA FILE=HCAPLUS ABB=ON PLU=ON L26 OR L30

=> d l31 1-24 ibib abs hitstr hitind

L31 ANSWER 1 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 2005:1021420 HCAPLUS Full-text  
DOCUMENT NUMBER: 143:308063  
TITLE: Method for improved dyeing of genuine  
leather with reactive dyes  
INVENTOR(S): Kanbai, V. A.; Bulgakova, I. V.; Zolina, L. I.;  
Azarenkova, M. A.  
PATENT ASSIGNEE(S): Moskovskii Gosudarstvennyi Universitet Dizayna i  
Tekhnologii, Russia  
SOURCE: Russ., No pp. given  
CODEN: RUXXE7  
DOCUMENT TYPE: Patent  
LANGUAGE: Russian  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE         |
|------------------------|------|----------|-----------------|--------------|
| RU 2260643             | C2   | 20050920 | RU 2003-135588  | 20031210 <-- |
| PRIORITY APPLN. INFO.: |      |          | RU 2003-135588  | 20031210 <-- |

AB A method for dyeing genuine leather with reactive dyes comprises  
neutralization of semifinished leather, reactive dyeing and subsequent  
fixation with an alkaline reagent. Neutralization is carried out using sodium  
bicarbonate in presence of 4.5-5.0% of Deep Dyeing preparation, dyeing is  
achieved with 2.5-5% of reactive dye at 3.4-3.5 pH in the presence of 0.9-1.2  
g/L of alizarin oil, and fixation is performed simultaneously with  
fatliquoring at 8.5-8.9 pH with 1.3-1.8% of sodium hydrocarbonate and 1.8-2.2%  
of Polinap AD in the fatliquoring composition which is used at 3.8-4.2%; all  
concns. are based on leather weight Dyed leather is rinsed by 0.8-1.2%  
solution of nonionic surfactant, such as Neonol AF 9-10. The described method  
results in deep interlocking of reactive dyes with leather, even distribution  
of color with excellent color fastness, and dyed leather goods have improved  
chemical and environmental resistance.

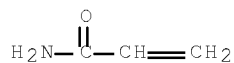
IT 9003-05-8, Polyacrylamide  
RL: MOA (Modifier or additive use); USES (Uses)  
(cationic; method for dyeing leather with  
reactive dyes resulting in improved color fastness)

RN 9003-05-8 HCAPLUS  
CN 2-Propenamide, homopolymer (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O

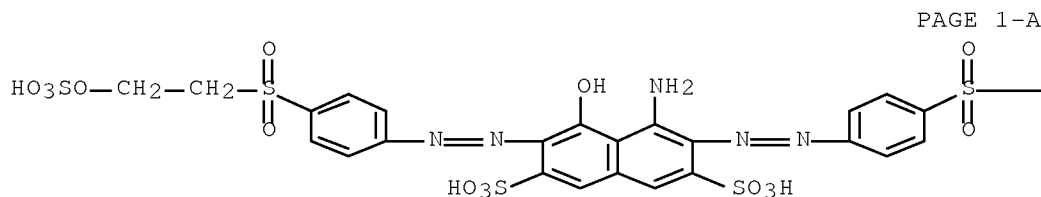


IT 17095-24-8, Reactive black 4ST

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (method for dyeing leather with reactive  
 dyes resulting in improved color fastness)

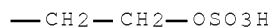
RN 17095-24-8 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3,6-bis[2-[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-, sodium salt (1:4) (CA INDEX NAME)



● 4 Na

PAGE 1-B

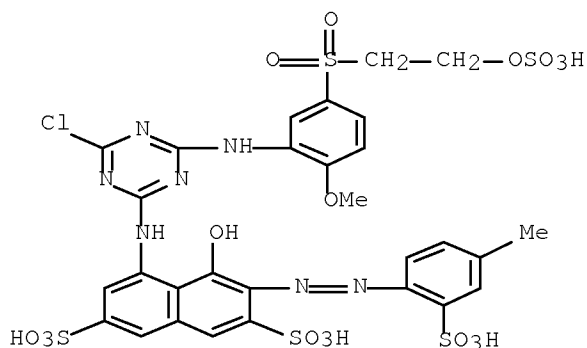


IT 75037-16-0, Reactive Red 4SSh

RL: TEM (Technical or engineered material use); USES (Uses)  
 (method for dyeing leather with reactive  
 dyes resulting in improved color fastness)

RN 75037-16-0 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 5-[[4-chloro-6-[[2-methoxy-5-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-4-hydroxy-3-[2-(4-methyl-2-sulfoophenyl)diazenyl]-, sodium salt (1:4) (CA INDEX NAME)



●4 Na

IC ICM D06P003-32  
ICS D06P003-10  
CC 45-2 (Industrial Organic Chemicals, Leather, Fats, and Waxes)  
ST excellent dye fixation color fastness leather reactive  
dyeing  
IT Leather  
(dyeing of; method for dyeing leather  
with reactive dyes resulting in improved color  
fastness)  
IT Reactive dyes  
(for leather; method for dyeing leather  
with reactive dyes resulting in improved color  
fastness)  
IT Neutralization  
(leather surface; method for dyeing leather  
with reactive dyes resulting in improved color  
fastness)  
IT Polyesters, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(method for dyeing leather with reactive  
dyes resulting in improved color fastness)  
IT Surfactants  
(nonionic; method for dyeing leather with  
reactive dyes resulting in improved color fastness)  
IT Reactive dyeing  
(process for leather; method for dyeing  
leather with reactive dyes resulting in  
improved color fastness)  
IT Castor oil  
RL: NUU (Other use, unclassified); USES (Uses)  
(sulfated; method for dyeing leather with  
reactive dyes resulting in improved color fastness)  
IT 9003-05-8, Polyacrylamide  
RL: MOA (Modifier or additive use); USES (Uses)  
(cationic; method for dyeing leather with  
reactive dyes resulting in improved color fastness)  
IT 37205-87-1, Neonol AF 9-10 737791-82-1, Polinap AD 864876-39-1, Deep  
Dyeing  
RL: NUU (Other use, unclassified); USES (Uses)  
(method for dyeing leather with reactive  
dyes resulting in improved color fastness)

IT 17095-24-8, Reactive black 4ST  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (method for dyeing leather with reactive  
 dyes resulting in improved color fastness)

IT 75037-16-0, Reactive Red 4SSh 864876-58-4,  
 Reactive Deep Black KT 864876-73-3, Reactive Deep  
 Black 4ST 864876-74-4, Reactive Golden Yellow 43  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (method for dyeing leather with reactive  
 dyes resulting in improved color fastness)

IT 144-55-8, Sodium bicarbonate, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (neutralization and fixation agent; method for dyeing  
 leather with reactive dyes resulting in  
 improved color fastness)

L31 ANSWER 2 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:460022 HCAPLUS Full-text

DOCUMENT NUMBER: 143:154896

TITLE: Compositions and preparation of azo dark  
 blue dye for dyeing fabric and  
 leather

INVENTOR(S): Xi, Xiang; Wu, Jinglei; Li, Xingjun

PATENT ASSIGNEE(S): Shanghai Dyestuff Chemical Plant No.8, Peop. Rep.  
 China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, No pp.  
 given

CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE         |
|------------------------|------|----------|-----------------|--------------|
| -----                  | ---- | -----    | -----           | -----        |
| CN 1511888             | A    | 20040714 | CN 2002-160741  | 20021227 <-- |
| PRIORITY APPLN. INFO.: |      |          | CN 2002-160741  | 20021227 <-- |

OTHER SOURCE(S): MARPAT 143:154896

AB The dark blue dye compns., suitable for dyeing and printing cotton, wool,  
 silk, leather, synthetic polyamide fiber and other blended fiber fabric, are  
 prepared via compounding several kinds of active dyes. The active dye compns.  
 have high reaction property and are especially suitable for middle temperature  
 dyeing.

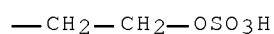
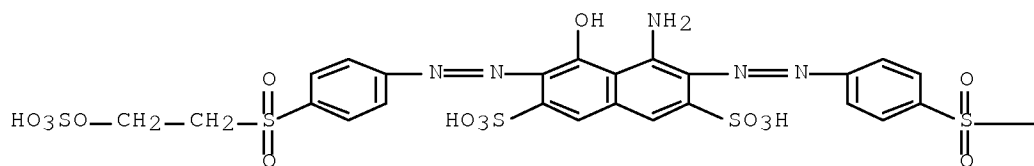
IT 55909-92-7 86634-91-5 281656-02-8  
 281656-13-1 859503-74-5 859503-75-6  
 859503-76-7 859503-77-8

RL: PEP (Physical, engineering or chemical process); PYP (Physical  
 process); TEM (Technical or engineered material use); PROC (Process); USES  
 (Uses)

(compns. of active azo dark blue dyes for dyeing  
 fabric and leather)

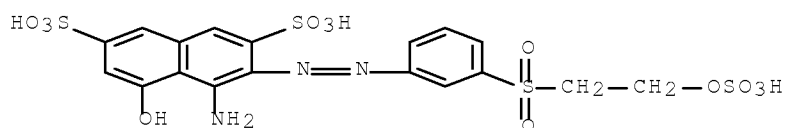
RN 55909-92-7 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3,6-bis[2-[4-[[2-  
 (sulfooxy)ethyl]sulfonyl]phenyl]diazonyl]- (CA INDEX NAME)



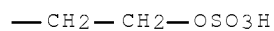
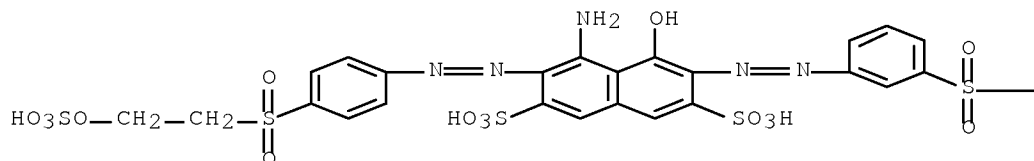
RN 86634-91-5 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3-[2-[3-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)



RN 281656-02-8 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-6-[2-[3-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]diazenyl]-3-[2-[4-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

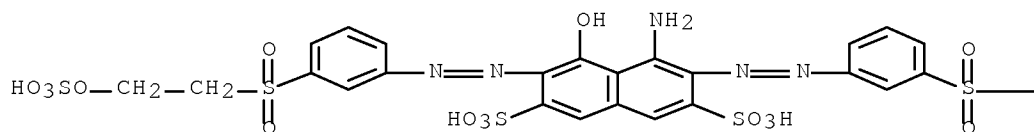




RN 281656-13-1 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3,6-bis[2-[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

PAGE 1-A



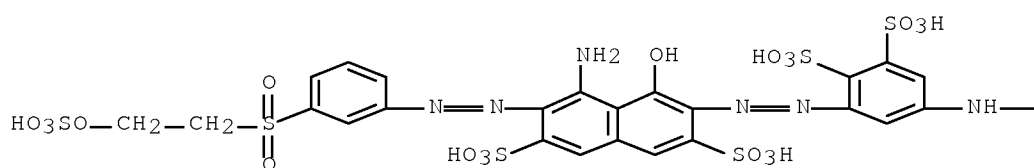
PAGE 1-B



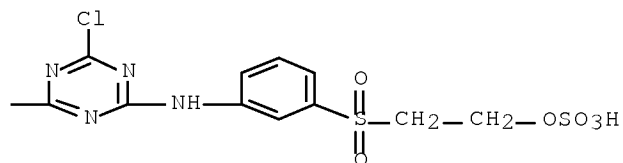
RN 859503-74-5 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[5-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2,3-disulphophenyl]diazenyl]-5-hydroxy-3-[2-[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



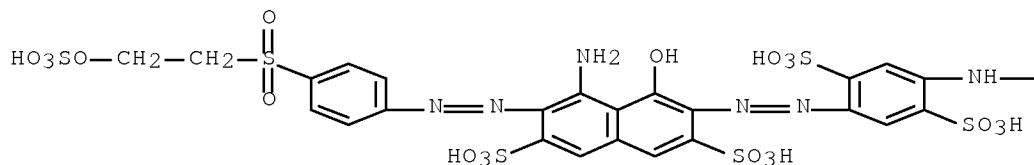
RN 859503-75-6 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[4-[[4-chloro-6-[[3-[[2-

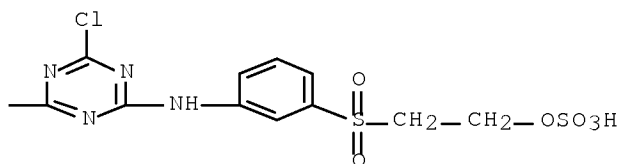
11/628659

(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2,5-disulfophenyl]diazenyl]-5-hydroxy-3-[2-[4-[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

PAGE 1-A



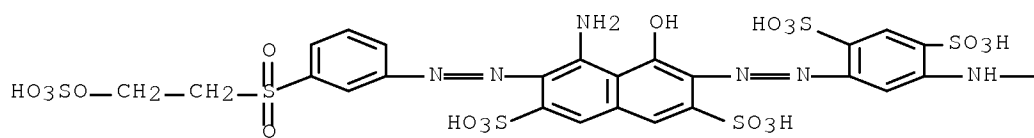
PAGE 1-B



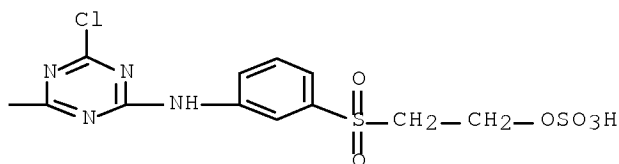
RN 859503-76-7 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[5-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2,4-disulfophenyl]diazenyl]-5-hydroxy-3-[2-[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

PAGE 1-A

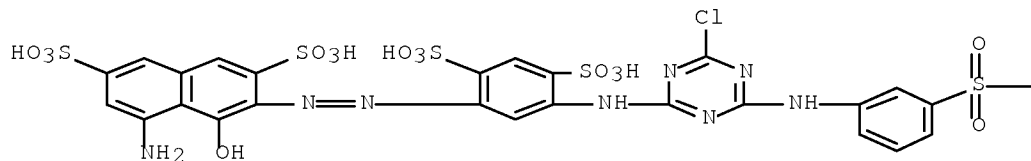


PAGE 1-B



RN 859503-77-8 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid, 5-amino-3-[2-[5-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2,4-disulfophenyl]diazenyl]-4-hydroxy- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

—CH<sub>2</sub>—CH<sub>2</sub>—OSO<sub>3</sub>H

IC ICM C09B067-24  
 ICS D06P001-38  
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
 Section cross-reference(s): 40, 45  
 ST active azo dark blue dye compn fabric leather dyeing  
 IT Textiles  
 (blended; dyeing with active azo dark blue dyes)  
 IT Pigments, nonbiological  
 (blue; compns. of active azo dark blue dyes for dyeing fabric and leather)  
 IT Reactive azo dyes  
 (compns. of active azo dark blue dyes for dyeing fabric and leather)  
 IT Textiles  
 (cotton; dyeing with active azo dark blue dyes)  
 IT Leather  
 Silk  
 Wool  
 (dyeing with active azo dark blue dyes)  
 IT Polyamide fibers, processes  
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)  
 (dyeing with active azo dark blue dyes)  
 IT Dyeing  
 (of cotton, wool, silk, leather, polyamide fiber and other blended fabric with active azo dark blue dyes)  
 IT 55909-92-7 86634-91-5 281656-02-8  
 281656-13-1 859503-74-5 859503-75-6  
 859503-76-7 859503-77-8

11/628659

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(comps. of active azo dark blue dyes for dyeing fabric and leather)

L31 ANSWER 3 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2005:460021 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:154895  
 TITLE: Composition and preparation of yellow azo dye for fabric dyeing  
 INVENTOR(S): Xi, Xiangyun; Wu, Jinglei; Cao, Yitian  
 PATENT ASSIGNEE(S): Shanghai Dyestuff Chemical Plant No.8, Peop. Rep. China  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, No pp. given  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.                         | KIND | DATE     | APPLICATION NO. | DATE         |
|------------------------------------|------|----------|-----------------|--------------|
| CN 1511887                         | A    | 20040714 | CN 2002-160740  | 20021227 <-- |
| CN 100357359                       | C    | 20071226 |                 |              |
| PRIORITY APPLN. INFO.:             |      |          | CN 2002-160740  | 20021227 <-- |
| OTHER SOURCE(S): MARPAT 143:154895 |      |          |                 |              |

AB The yellow dye comps., suitable for dyeing and printing cotton, wool, silk, leather, synthetic polyamide fiber and other blended fabric, are prepared via compounding several kinds of active azo dyes containing sulfo groups. The dye comps. have high reaction property, bright color and excellent color fastness, and can be used at middle temperature, e.g., at 50-70°.

IT 118739-29-0 142279-62-7 143354-19-2  
 163965-63-7 163965-64-8 176791-48-3  
 859497-86-2 859497-87-3

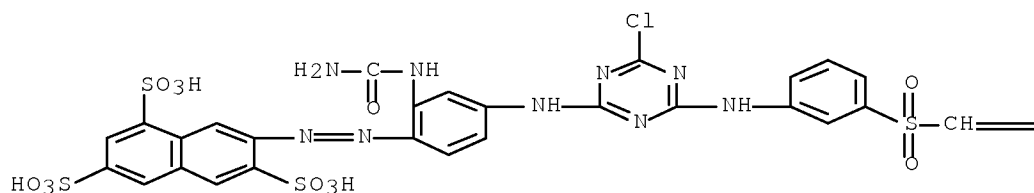
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(composition and preparation of yellow azo dye containing sulfo groups for dyeing of fabric and leather)

RN 118739-29-0 HCAPLUS

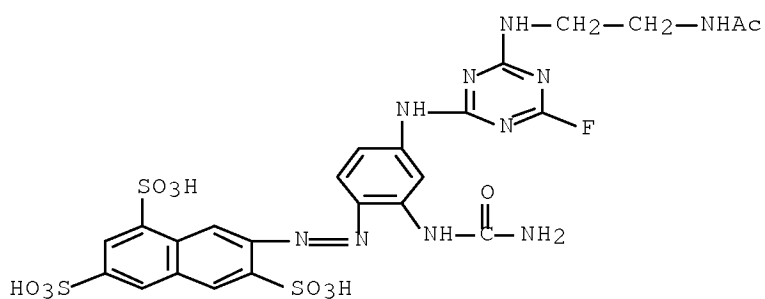
CN 1,3,6-Naphthalenetrisulfonic acid,  
 7-[2-[2-[(aminocarbonyl)amino]-4-[[4-chloro-6-[[3-(ethenylsulfonyl)phenyl]amino]-1,3,5-triazin-2-yl]amino]phenyl]diazenyl]-  
 (CA INDEX NAME)

PAGE 1-A

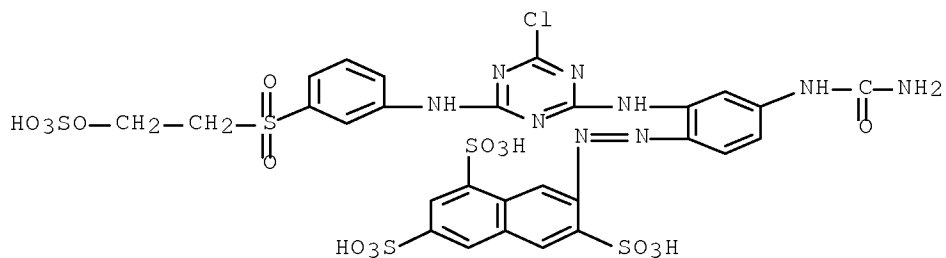


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RN 142279-62-7 HCAPLUS  
 CN 1,3,6-Naphthalenetrisulfonic acid,  
 7-[2-[4-[4-[2-(acetylamino)ethyl]amino]-6-fluoro-1,3,5-triazin-2-yl]amino]-2-[(aminocarbonyl)amino]phenyl]diazanyl]- (CA INDEX NAME)

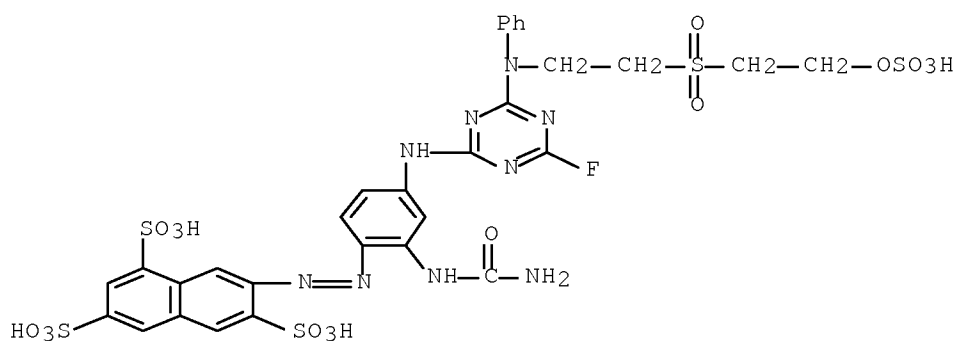


RN 143354-19-2 HCAPLUS  
 CN 1,3,6-Naphthalenetrisulfonic acid,  
 7-[2-[4-[(aminocarbonyl)amino]-2-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]phenyl]diazanyl]- (CA INDEX NAME)



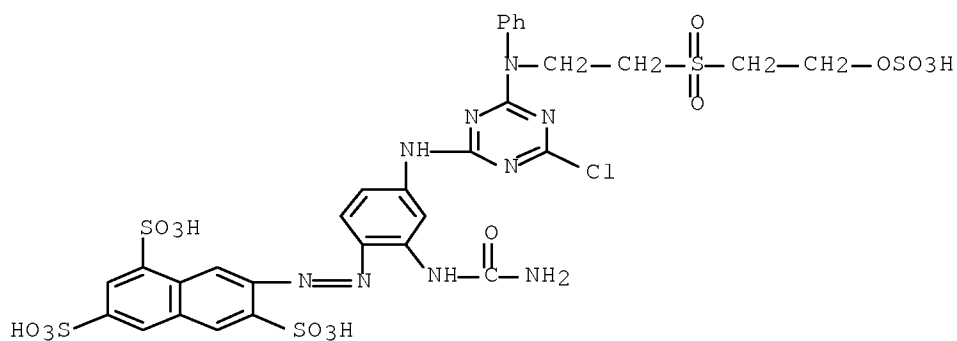
RN 163965-63-7 HCAPLUS  
 CN 1,3,6-Naphthalenetrisulfonic acid,  
 7-[2-[2-[(aminocarbonyl)amino]-4-[[4-fluoro-6-[phenyl[2-[[2-(sulfooxy)ethyl]sulfonyl]ethyl]amino]-1,3,5-triazin-2-yl]amino]phenyl]diazanyl]- (CA INDEX NAME)

11/628659



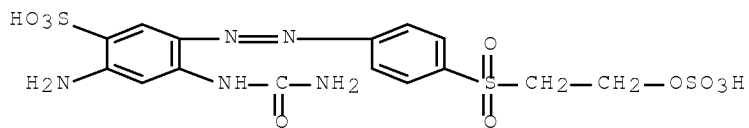
RN 163965-64-8 HCAPLUS

CN 1,3,6-Naphthalenetrisulfonic acid,  
7-[2-[2-[(aminocarbonyl)amino]-4-[[4-chloro-6-[phenyl[2-[[2-(sulfoxy)ethyl]sulfonyl]ethyl]amino]-1,3,5-triazin-2-yl]amino]phenyl]diazenyl]- (CA INDEX NAME)



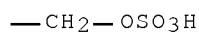
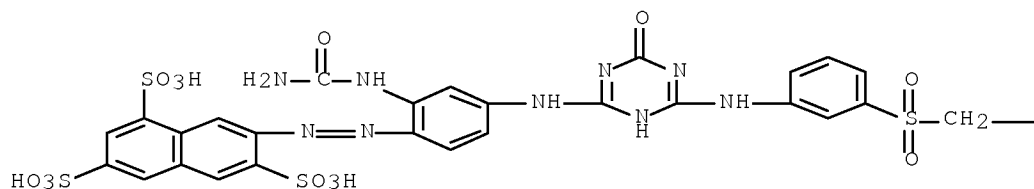
RN 176791-48-3 HCAPLUS

CN Benzenesulfonic acid, 2-amino-4-[(aminocarbonyl)amino]-5-[2-[4-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

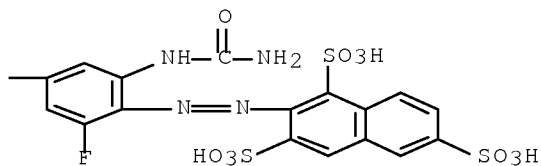
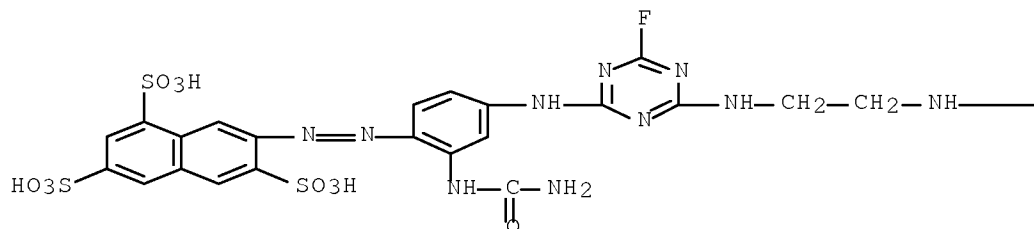


RN 859497-86-2 HCAPLUS

CN 1,3,6-Naphthalenetrisulfonic acid,  
7-[2-[2-[(aminocarbonyl)amino]-4-[[5,6-dihydro-6-oxo-4-[[3-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]phenyl]diazenyl]- (CA INDEX NAME)



RN 859497-87-3 HCAPLUS  
 CN 1,3,6-Naphthalenetrisulfonic acid,  
 2-[2-[2-[(aminocarbonyl)amino]-4-[[2-[[4-[[3-[(aminocarbonyl)amino]-4-[2-(3,6,8-trisulfo-2-naphthalenyl)diazenyl]phenyl]amino]-6-fluoro-1,3,5-triazin-2-yl]amino]ethyl]amino]-6-fluorophenyl]diazenyl]- (CA INDEX NAME)



IC ICM C09B062-026  
 ICS C09B067-24; D06P001-38  
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
 Section cross-reference(s): 40, 45

ST fabric dyeing azo yellow dye compn  
 IT Textiles  
 (blend; dyeing with yellow azo dyes)  
 IT Reactive azo dyes  
 (composition and preparation of yellow azo dye containing sulfo  
 groups for dyeing of fabric and leather)  
 IT Textiles  
 (cotton; dyeing with yellow azo dyes)  
 IT Leather  
 Silk  
 Wool  
 (dyeing with yellow azo dyes)  
 IT Polyamide fibers, processes  
 RL: PEP (Physical, engineering or chemical process); PYP (Physical  
 process); PROC (Process)  
 (dyeing with yellow azo dyes)  
 IT Dyeing  
 (of cotton, wool, silk, leather, synthetic polyamide fiber  
 and blended fabric with yellow azo dyes)  
 IT Pigments, nonbiological  
 (yellow; composition and preparation of yellow azo dye containing  
 sulfo groups for dyeing of fabric and leather)  
 IT 118739-29-0 142279-62-7 143354-19-2  
 163965-63-7 163965-64-8 176791-48-3  
 859497-86-2 859497-87-3  
 RL: PEP (Physical, engineering or chemical process); PYP (Physical  
 process); TEM (Technical or engineered material use); PROC (Process); USES  
 (Uses)  
 (composition and preparation of yellow azo dye containing sulfo  
 groups for dyeing of fabric and leather)

L31 ANSWER 4 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2005:460020 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:154894  
 TITLE: Composition and preparation of azo red  
 dye for dyeing fiber and leather  
 INVENTOR(S): Xi, Xianyun; Wu, Jinglei; Lu, Jinde  
 PATENT ASSIGNEE(S): Shanghai Dyestuff Chemical Plant No.8, Peop. Rep.  
 China  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, No pp.  
 given  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.             | KIND  | DATE     | APPLICATION NO. | DATE         |
|------------------------|---|----------|-----------------|--------------|
| -----                  | ----  | -----    | -----           | -----        |
| CN 1511886             | A   | 20040714 | CN 2002-160738  | 20021227 <-- |
| CN 100404629           | C   | 20080723 |                 |              |
| PRIORITY APPLN. INFO.: |   |          | CN 2002-160738  | 20021227 <-- |
| OTHER SOURCE(S):       | MARPAT 143:154894   |          |                 |              |
| AB                     | The red dye compns. are suitable for dyeing and printing cotton, wool, silk,<br>leather, synthetic polyamide fiber and other blended fiber fabric and prepared<br>via compounding several kinds of active dyes. The compns. have high reaction<br>property, bright color and excellent color fastness, and are suitable for<br>middle temperature dyeing at 50-70°. |          |                 |              |
| IT                     | 70929-83-8 150176-85-5 774169-37-8<br>859500-58-6 859500-59-7 859500-60-0   |          |                 |              |



11/628659

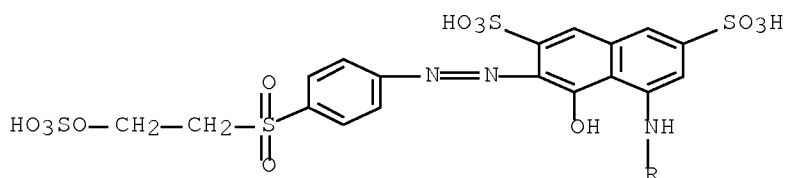
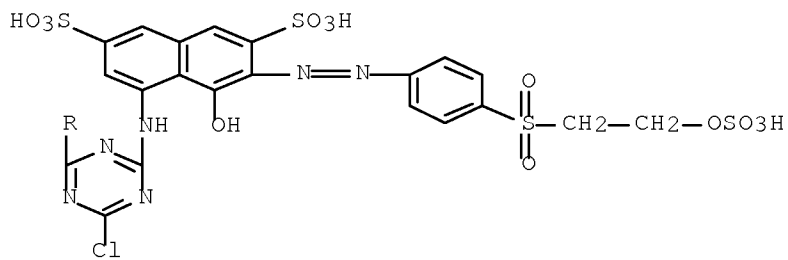
859500-61-1 859500-62-2

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(composition of reactive azo red dye for dyeing fiber and leather)

RN 70929-83-8 HCAPLUS

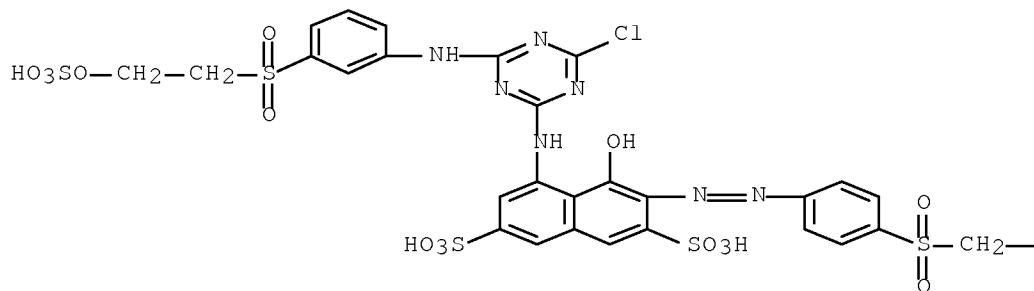
CN 2,7-Naphthalenedisulfonic acid, 4,4'-[(6-chloro-1,3,5-triazine-2,4-diyl)diimino]bis[5-hydroxy-6-[[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo]-(9CI) (CA INDEX NAME)



RN 150176-85-5 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 5-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-4-hydroxy-3-[2-[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-(CA INDEX NAME)

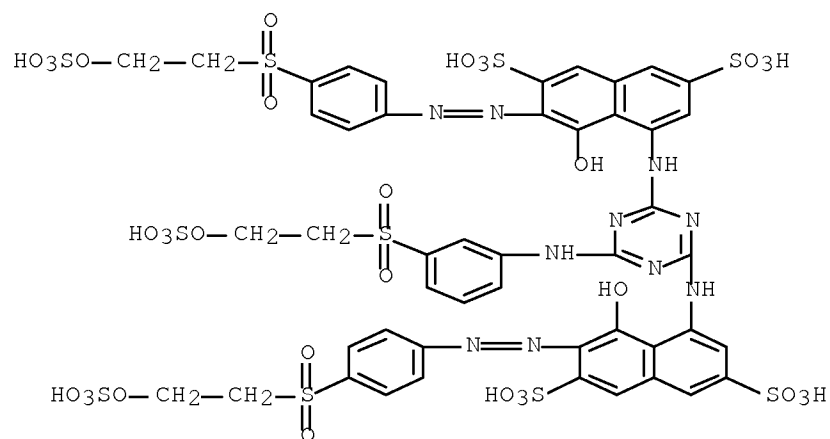
PAGE 1-A



—CH<sub>2</sub>—OSO<sub>3</sub>H

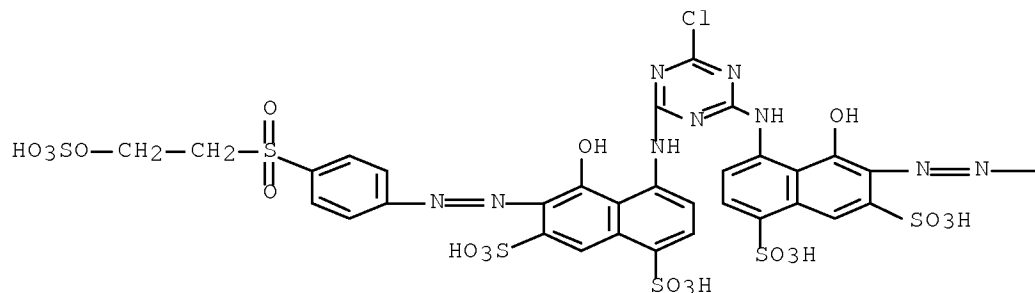
RN 774169-37-8 HCAPLUS

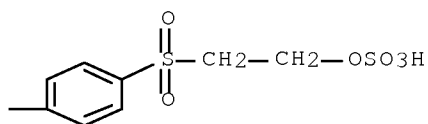
CN 2,7-Naphthalenedisulfonic acid, 4,4'-[[6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazine-2,4-diyl]diimino]bis[5-hydroxy-6-[[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo]-(9CI) (CA INDEX NAME)



RN 859500-58-6 HCAPLUS

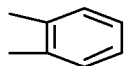
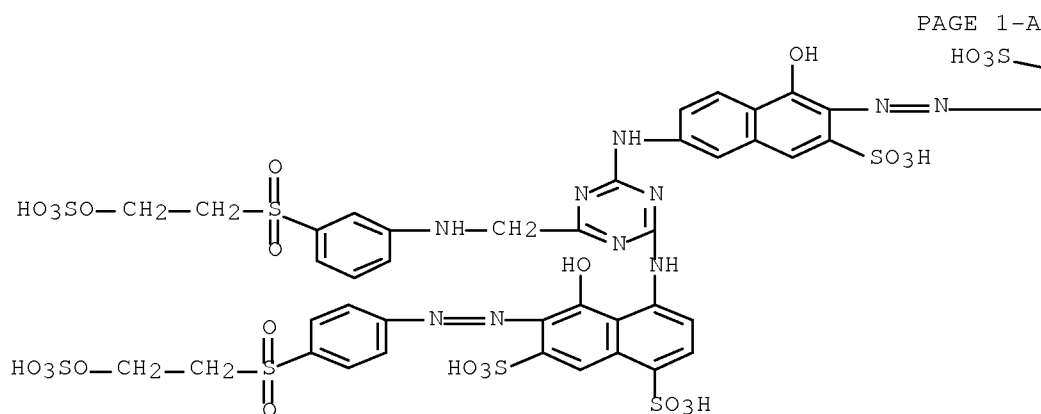
CN 1,7-Naphthalenedisulfonic acid, 4,4'-[(6-chloro-1,3,5-triazine-2,4-diyl)diimino]bis[5-hydroxy-6-[2-[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-(CA INDEX NAME)





RN 859500-59-7 HCAPLUS

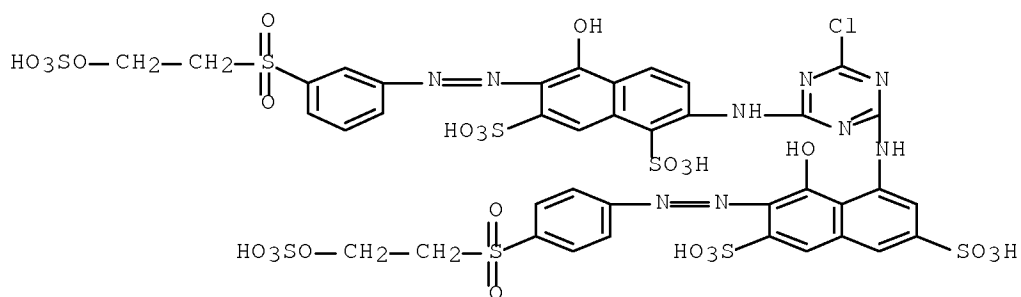
CN 1,7-Naphthalenedisulfonic acid, 5-hydroxy-4-[[4-[[5-hydroxy-7-sulfo-6-[2-(2-sulfophenyl)diazenyl]-2-naphthalenyl]amino]-6-[[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]methyl]-1,3,5-triazin-2-yl]amino]-6-[2-[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)



RN 859500-60-0 HCAPLUS

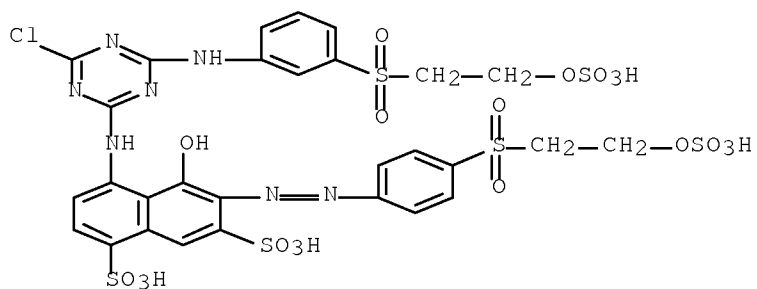
CN 1,7-Naphthalenedisulfonic acid, 2-[[4-chloro-6-[[8-hydroxy-3,6-disulfo-7-[2-[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-1-naphthalenyl]amino]-1,3,5-triazin-2-yl]amino]-5-hydroxy-6-[2-[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

11/628659



RN 859500-61-1 HCAPLUS

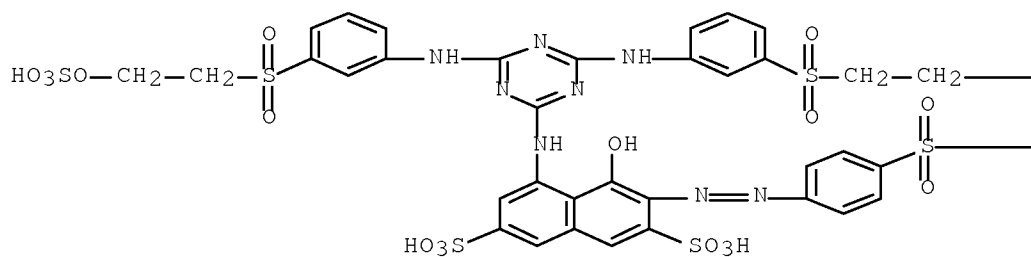
CN 1,7-Naphthalenedisulfonic acid, 4-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-5-hydroxy-6-[2-[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)



RN 859500-62-2 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 5-[[4,6-bis[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-4-hydroxy-3-[2-[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

PAGE 1-A



—OSO<sub>3</sub>H

—CH<sub>2</sub>—CH<sub>2</sub>—OSO<sub>3</sub>H

IC ICM C09B062-026  
ICS C09B067-24; D06P001-38

CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
Section cross-reference(s): 40, 45

ST active azo red dye compn fiber leather  
dyeing

IT Textiles  
(blended; dyeing with reactive azo red  
dyes containing sulfo groups)

IT Reactive azo dyes  
(composition of reactive azo red dye for  
dyeing fiber and leather)

IT Textiles  
(cotton; dyeing with reactive azo red  
dyes containing sulfo groups)

IT Leather  
Silk  
Wool  
(dyeing with reactive azo red  
dyes containing sulfo groups)

IT Polyamide fibers, processes  
RL: PEP (Physical, engineering or chemical process); PYP (Physical  
process); PROC (Process)  
(dyeing with reactive azo red  
dyes containing sulfo groups)

IT Dyeing  
(of cotton, wool, silk, leather, polyamide fiber and blended  
fiber fabric with reactive azo red dyes)

IT Pigments, nonbiological  
(red; composition of reactive azo red dye for  
dyeing fiber and leather)

IT 70929-83-8 150176-85-5 774169-37-8  
859500-58-6 859500-59-7 859500-60-0  
859500-61-1 859500-62-2  
RL: PEP (Physical, engineering or chemical process); PYP (Physical  
process); TEM (Technical or engineered material use); PROC (Process); USES  
(Uses)  
(composition of reactive azo red dye for  
dyeing fiber and leather)

L31 ANSWER 5 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 2005:460018 HCAPLUS Full-text  
DOCUMENT NUMBER: 143:154893  
TITLE: Composition of bright azo red dyes  
for dyeing fiber and leather  
INVENTOR(S): Xi, Xiangyun; Wu, Jinglei; Li, Xuanji  
PATENT ASSIGNEE(S): Shanghai Dyestuff Chemical Plant No.8, Peop. Rep.  
China

11/628659

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, No pp. given  
CODEN: CNXXEV  
DOCUMENT TYPE: Patent  
LANGUAGE: Chinese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE         |
|------------------------|------|----------|-----------------|--------------|
| CN 1511884             | A    | 20040714 | CN 2002-160739  | 20021227 <-- |
| CN 100404628           | C    | 20080723 |                 |              |
| PRIORITY APPLN. INFO.: |      |          | CN 2002-160739  | 20021227 <-- |

OTHER SOURCE(S): MARPAT 143:154893

AB The bright red dye composition suitable for dyeing and printing cotton, wool, silk, leather, synthetic polyamide fiber and other blended fabric are prepared via compounding several kinds of active dyes. The active dye compns. have excellent coloring capacity and are especially suitable for middle temperature dyeing of cotton fabric at 50-70°.

IT 146578-98-5 250152-76-2 859502-95-7  
859502-96-8 859502-97-9 859502-98-0  
859502-99-1 859503-00-7 859503-01-8

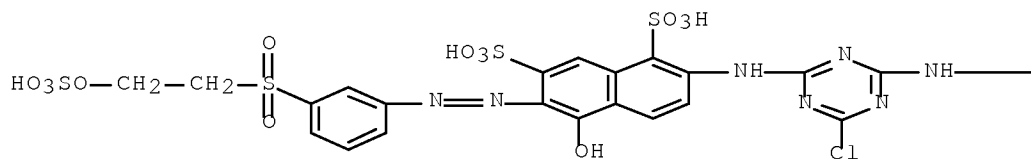
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(composition of ~~azo~~ bright red dyes for dyeing fiber and leather)

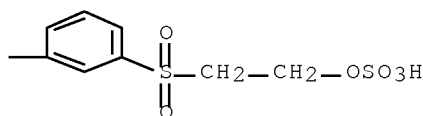
RN 146578-98-5 HCAPLUS

CN 1,7-Naphthalenedisulfonic acid, 2-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-5-hydroxy-6-[2-[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

PAGE 1-A



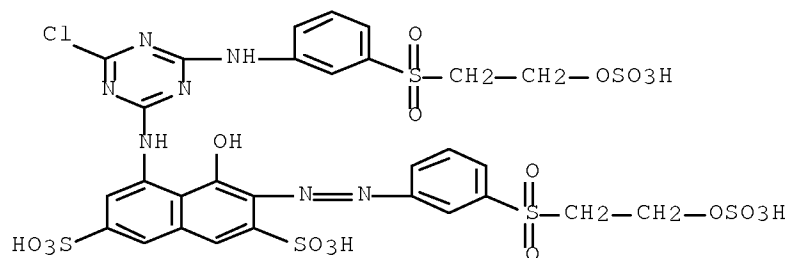
PAGE 1-B



RN 250152-76-2 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 5-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-4-hydroxy-3-[2-[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

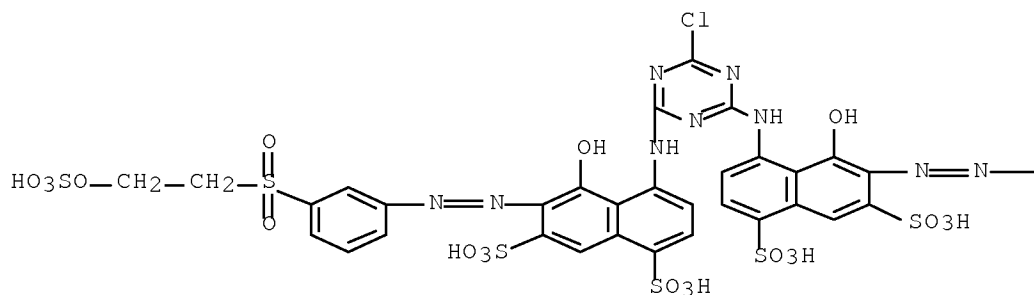
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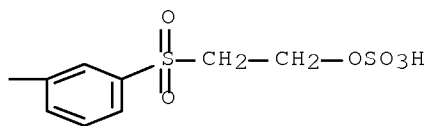
RN 859502-95-7 HCAPLUS

CN 1,7-Naphthalenedisulfonic acid, 4,4'-[(6-chloro-1,3,5-triazine-2,4-diyl)diimino]bis[5-hydroxy-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo]- (9CI) (CA INDEX NAME)

PAGE 1-A

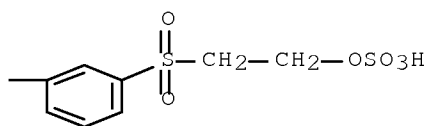
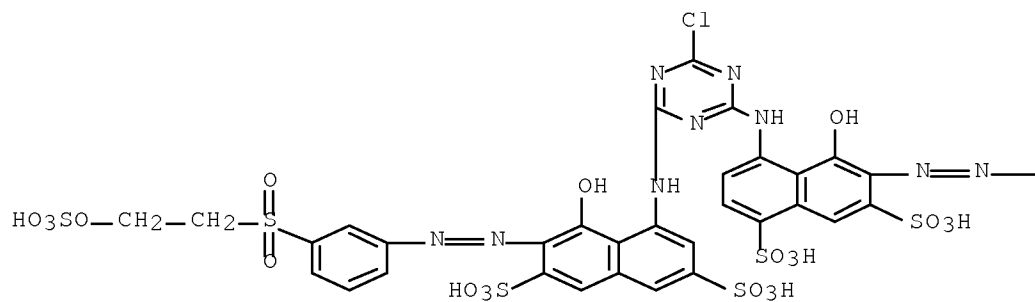


PAGE 1-B



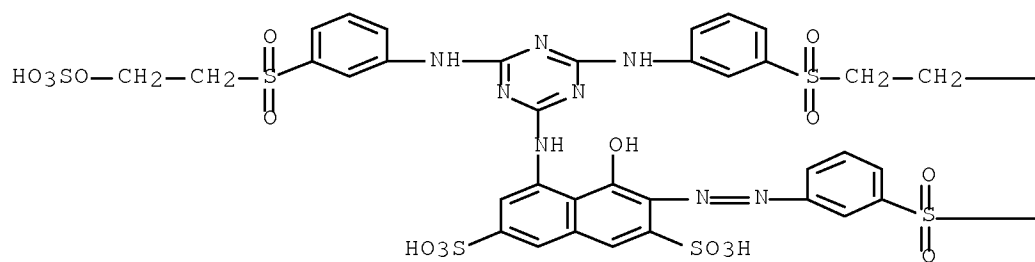
RN 859502-96-8 HCAPLUS

CN 1,7-Naphthalenedisulfonic acid, 4-[[4-chloro-6-[[8-hydroxy-3,6-disulfo-7-[2-[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazonyl]-1-naphthalenyl]amino]-1,3,5-triazin-2-yl]amino]-5-hydroxy-6-[2-[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazonyl]- (CA INDEX NAME)



RN 859502-97-9 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 5-[[4,6-bis[[3-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-4-hydroxy-3-[2-[3-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)



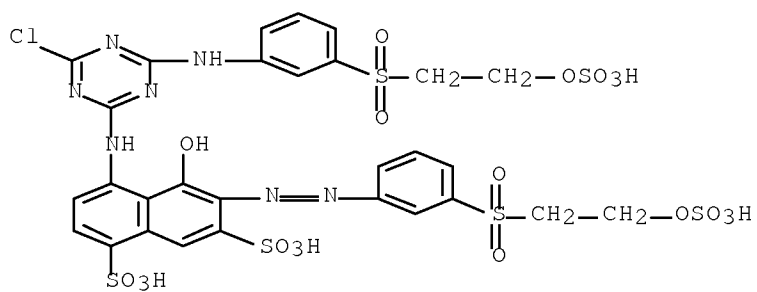


—OSO<sub>3</sub>H

—CH<sub>2</sub>—CH<sub>2</sub>—OSO<sub>3</sub>H

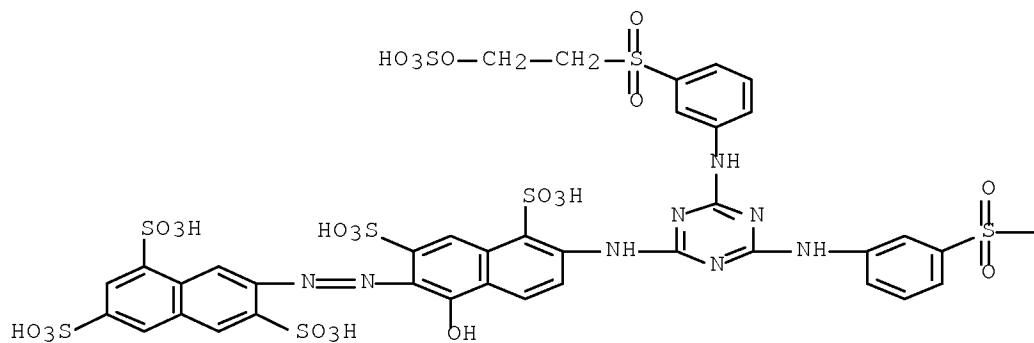
RN 859502-98-0 HCAPLUS

CN 1,7-Naphthalenedisulfonic acid, 4-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-5-hydroxy-6-[[2-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)



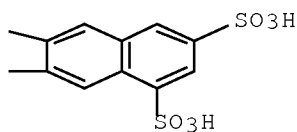
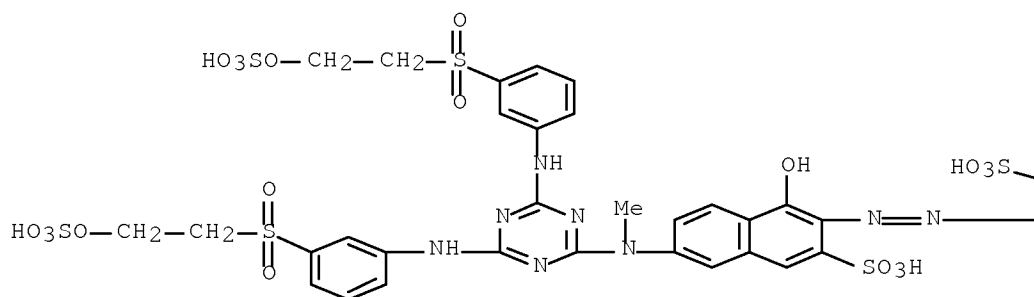
RN 859502-99-1 HCAPLUS

CN 1,3,6-Naphthalenetrisulfonic acid, 7-[[2-[[6-[[4,6-bis[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-1-hydroxy-3,5-disulfo-2-naphthalenyl]diazenyl]- (CA INDEX NAME)

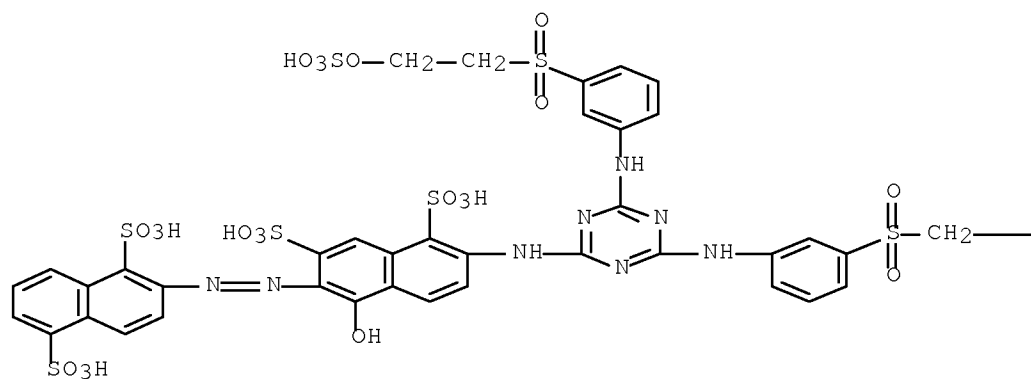




RN 859503-00-7 HCAPLUS  
 CN 1,3,6-Naphthalenetrisulfonic acid,  
 7-[2-[6-[4,6-bis[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-  
 triazin-2-yl]methylamino]-1-hydroxy-3-sulfo-2-naphthalenyl]diazenyl]- (CA  
 INDEX NAME)



RN 859503-01-8 HCAPLUS  
 CN 1,5-Naphthalenedisulfonic acid, 2-[2-[6-[4,6-bis[[3-[[2-  
 (sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-1-hydroxy-  
 3,5-disulfo-2-naphthalenyl]diazenyl]- (CA INDEX NAME)



—CH<sub>2</sub>—OSO<sub>3</sub>H

- IC ICM C09B062-00  
ICS C09B067-24; D06P001-38
- CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
Section cross-reference(s): 40, 45
- ST active bright azo red dye compn fiber leather dyeing
- IT Textiles  
(blended; dyeing with azo bright red dyes)
- IT Reactive azo dyes  
(composition of azo bright red dyes for dyeing fiber and leather)
- IT Textiles  
(cotton; dyeing with azo bright red dyes)
- IT Leather  
Silk  
Wool  
(dyeing with azo bright red dyes)
- IT Dyeing  
(of cotton, wool, silk, leather, polyamide fiber and blended fabric with azo bright red dyes)
- IT Polyamide fibers, processes  
RL: PEP (Physical, engineering or chemical process); PYP (Physical

process); PROC (Process)  
(of cotton, wool, silk, leather, polyamide fiber and blended  
fabric with azo bright red dyes)

IT Pigments, nonbiological

(red; composition of azo bright red dyes for dyeing  
fiber and leather)

IT 146578-98-5 250152-76-2 859502-95-7  
859502-96-8 859502-97-9 859502-98-0  
859502-99-1 859503-00-7 859503-01-8

RL: PEP (Physical, engineering or chemical process); PYP (Physical  
process); TEM (Technical or engineered material use); PROC (Process); USES  
(Uses)

(composition of azo bright red dyes for dyeing fiber and  
leather)

L31 ANSWER 6 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:39060 HCAPLUS Full-text

DOCUMENT NUMBER: 143:308006

TITLE: Effect of vinyl acetate grafting on the dyeability of  
chrome leather

AUTHOR(S): Mohamed, O. A.; Haroun, A. A.; El-Sayed, N. H.

CORPORATE SOURCE: Dept. of Chemistry of Tanning Materials and Protein,  
National Research Centre, Cairo, Egypt

SOURCE: Journal of the Society of Leather Technologists and  
Chemists (2004), 88(6), 231-235

CODEN: JSLTBY; ISSN: 0144-0322

PUBLISHER: Society of Leather Technologists and Chemists

DOCUMENT TYPE: Journal

LANGUAGE: English

AB This study is concerned with enhancing the dyeability of leather by graft  
polymerization with vinyl acetate. The application of a vinyl sulfone  
reactive dye to the grafted leather revealed that vinyl acetate imparted  
addnl. sites to the leather available for attachment of the reactive dye.

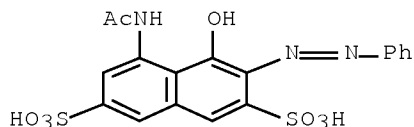
IT 3734-67-6, C.I. Acid Red 1

RL: TEM (Technical or engineered material use); USES (Uses)

(Amecid Floxine 2GN, red dye; effect of vinyl acetate grafting on  
dyeing of chrome leather with)

RN 3734-67-6 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 5-(acetylamino)-4-hydroxy-3-(2-  
phenyldiazenyl)-, sodium salt (1:2) (CA INDEX NAME)



●2 Na

IT 17095-24-8, Remazol Black B

RL: TEM (Technical or engineered material use); USES (Uses)

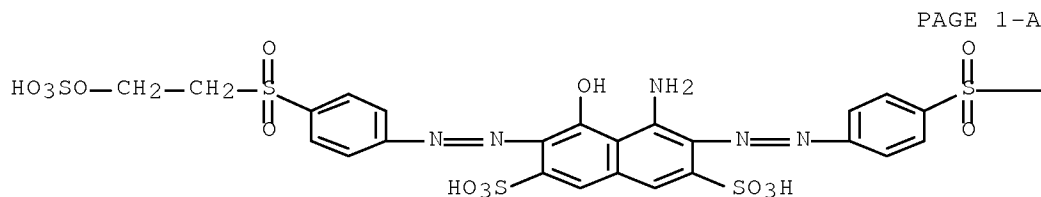
(black reactive dye; effect of vinyl acetate  
grafting on dyeing of chrome leather with)

RN 17095-24-8 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3,6-bis[2-[4-[[2-

# 11/628659

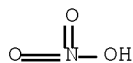
(sulfooxy)ethyl[sulfonyl]phenyl[diazenyl]-, sodium salt (1:4) (CA INDEX NAME)



PAGE 1-B

—CH<sub>2</sub>—CH<sub>2</sub>—OSO<sub>3</sub>H

IT 10139-51-2, Ceric ammonium nitrate  
 RL: CAT (Catalyst use); USES (Uses)  
 (graft polymerization catalyst; in effect of vinyl acetate grafting on dyeability of chrome leather)  
 RN 10139-51-2 HCAPLUS  
 CN Nitric acid, cerium(4+) ammonium salt (6:1:2) (CA INDEX NAME)



●1/6 Ce(IV)

●1/3 NH<sub>3</sub>

CC 45-2 (Industrial Organic Chemicals, Leather, Fats, and Waxes)  
 Section cross-reference(s): 37  
 ST leather vinyl acetate graft polymn dyeability  
 IT Leather  
 (chrome; effect of vinyl acetate grafting on dyeability of)  
 IT Dyeing  
 Reactive dyeing  
 pH  
 (effect of vinyl acetate grafting on dyeability of chrome leather)  
 IT Polymerization  
 (graft, radical; effect of vinyl acetate grafting on dyeability of chrome leather)  
 IT Polymerization catalysts

(graft, radical; in effect of vinyl acetate grafting on dyeability of chrome leather)

IT Leather  
 (wet blue; effect of vinyl acetate grafting on dyeability of)  
 IT 3734-67-6, C.I. Acid Red 1  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (Amecid Floxine 2GN, red dye; effect of vinyl acetate grafting on dyeing of chrome leather with)  
 IT 17095-24-8, Remazol Black B  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (black reactive dye; effect of vinyl acetate grafting on dyeing of chrome leather with)  
 IT 108-05-4DP, Vinyl acetate, polymers with leather, graft  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (effect of vinyl acetate grafting on dyeability of chrome leather)  
 IT 10139-51-2, Ceric ammonium nitrate  
 RL: CAT (Catalyst use); USES (Uses)  
 (graft polymerization catalyst; in effect of vinyl acetate grafting on dyeability of chrome leather)  
 REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 7 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2004:465254 HCAPLUS Full-text

DOCUMENT NUMBER: 142:24862

TITLE: Physical and chemical study of domestic reactive dyes

AUTHOR(S): Zolina, L. I.; Bulgakova, I. V.; Kanbai, V. A.; Eliseeva, N. A.

CORPORATE SOURCE: MGUDT, Russia

SOURCE: Kozhevenno-Obuvnaya Promyshlennost (2004), (2), 48-50

CODEN: KOOPAJ; ISSN: 0023-4354

PUBLISHER: OOO "Arina"

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Characteristics of reactive black azo dyes and their performance in leather dyeing are addressed. Dispersion composition, adsorption parameters, and diffusion into gelatine films are determined

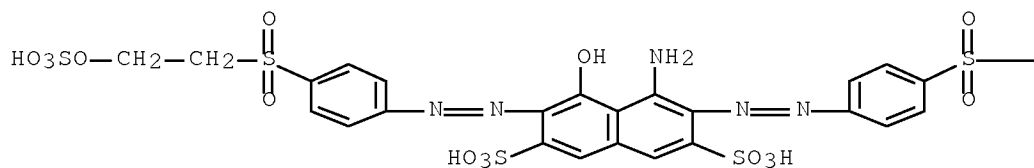
IT 17095-24-8, C.I. Reactive Black 5 802914-29-0, Reactive Black 3Sh

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(phys. and chemical characterization of domestic black reactive azo dyes for leather)

RN 17095-24-8 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3,6-bis[2-[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-, sodium salt (1:4) (CA INDEX NAME)

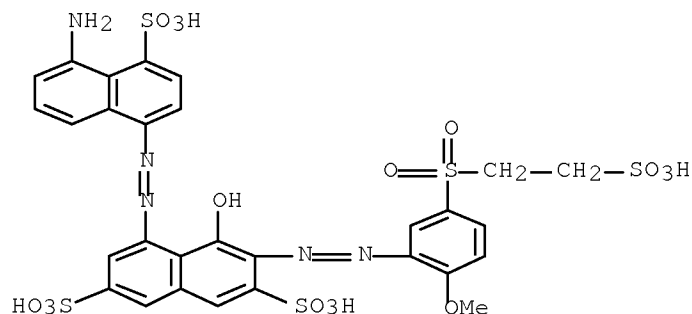


●4 Na

—CH<sub>2</sub>—CH<sub>2</sub>—OSO<sub>3</sub>H

RN 802914-29-0 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 5-[2-(5-amino-4-sulfo-1-naphthalenyl)diazenyl]-4-hydroxy-3-[2-[2-methoxy-5-[(2-sulfoethyl)sulfonyl]phenyl]diazenyl]-, sodium salt (1:4) (CA INDEX NAME)



●4 Na

CC 45-2 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

Section cross-reference(s): 41

ST reactive black azo dye leather

IT Leather

Reactive azo dyes

(phys. and chemical characterization of domestic black reactive azo dyes for leather)

IT 17095-24-8, C.I. Reactive Black 5 802914-29-0, Reactive Black 3Sh

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(phys. and chemical characterization of domestic black reactive azo dyes for leather)

L31 ANSWER 8 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2002:505067 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:80276  
 TITLE: Anionic azo dyes and their use on  
 cotton and leather  
 INVENTOR(S): Mazza, Jorge  
 PATENT ASSIGNEE(S): Argent.  
 SOURCE: U.S. Pat. Appl. Publ., 9 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE            |
|------------------------|------|----------|-----------------|-----------------|
| US 20020083532         | A1   | 20020704 | US 2001-23962   | 20011218 <--    |
| US 20060150345         | A1   | 20060713 | US 2004-881342  | 20040630 <--    |
| US 20070289072         | A1   | 20071220 | US 2007-748371  | 20070514 <--    |
| PRIORITY APPLN. INFO.: |      |          | AR 2000-106734  | A 20001218 <--  |
|                        |      |          | US 2001-23962   | A2 20011218 <-- |
|                        |      |          | US 2004-881342  | B2 20040630 <-- |

OTHER SOURCE(S): MARPAT 137:80276

AB Anionic azo dyes are obtained which comprise at least one spacer arm bounded to their chemical structure. These anionic coloring agents may be depicted by CA-BE, wherein CA is an anionic coloring agent comprising at least 1 chromophore group and BE is the spacer arm, which has the chemical structure: -(X-R-Z)<sub>r</sub>, wherein X is a direct link or a group having the formula -S(O)<sub>s</sub>, wherein s is 0-2; or -NR<sub>1</sub>-, wherein R<sub>1</sub> is H or a C<sub>1</sub>-10-alkyl group; R is a C<sub>1</sub>-10 straight or branched alkylene group; Z is a polar group; and r is ≥ 1. The invention also refers to coloring compns., which comprise at least one anionic coloring agent CA-BE in admixt. with anionic coloring agents which do not have spacer arms. The anionic coloring agents and the coloring compns. containing them may be used to dye cotton and wool substrates, regenerated cellulose, leather, cardboard, and paper. The introduction of spacer arms in the structure of the anionic coloring agents leads to modified anionic coloring agents, which differ from the known coloring agents in their dyeing properties such as strength, tone, and affinity, due to fixation modifications onto the substrate to be dyed. Examples were given for the preparation of acid, reactive, sulfur, and metalized dyes.

IT 1102416-75-0 1102416-76-1 1102416-77-2  
 1102416-78-3

RL: PRPH (Prophetic)

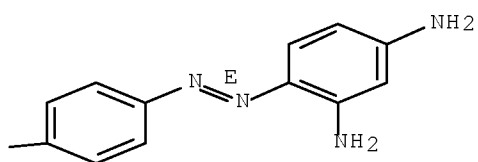
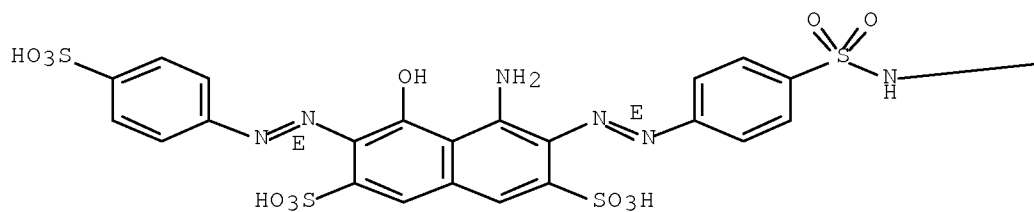
(Anionic azo dyes and their use on cotton and leather)

RN 1102416-75-0 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-3-[(1E)-2-[4-[[[4-[(1E)-2-(2,4-diaminophenyl)diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-5-hydroxy-6-[(1E)-2-(4-sulfophenyl)diazenyl]- (CA INDEX NAME)

Double bond geometry as shown.

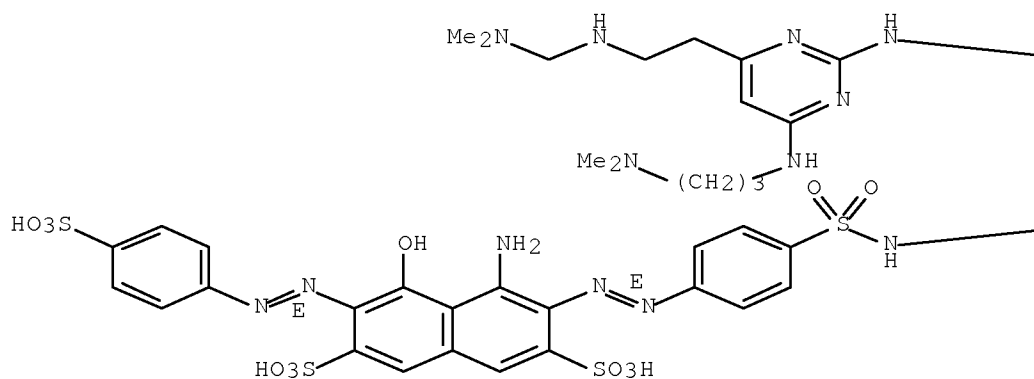


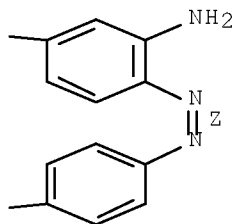


RN 1102416-76-1 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-3-[(1E)-2-[4-[[[4-[(1Z)-2-[2-amino-4-[[4-[2-[[[(dimethylamino)methyl]amino]ethyl]-6-[[3-(dimethylamino)propyl]amino]-2-pyrimidinyl]amino]phenyl]diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-5-hydroxy-6-[(1E)-2-(4-sulfohenyl)diazenyl]- (CA INDEX NAME)

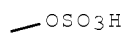
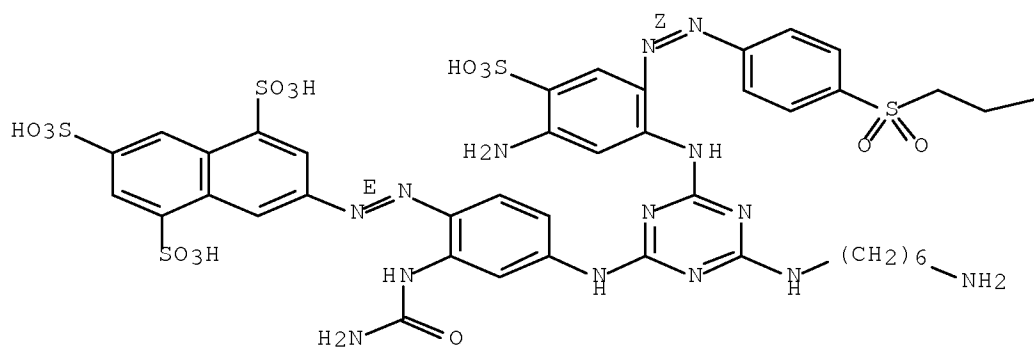
Double bond geometry as shown.





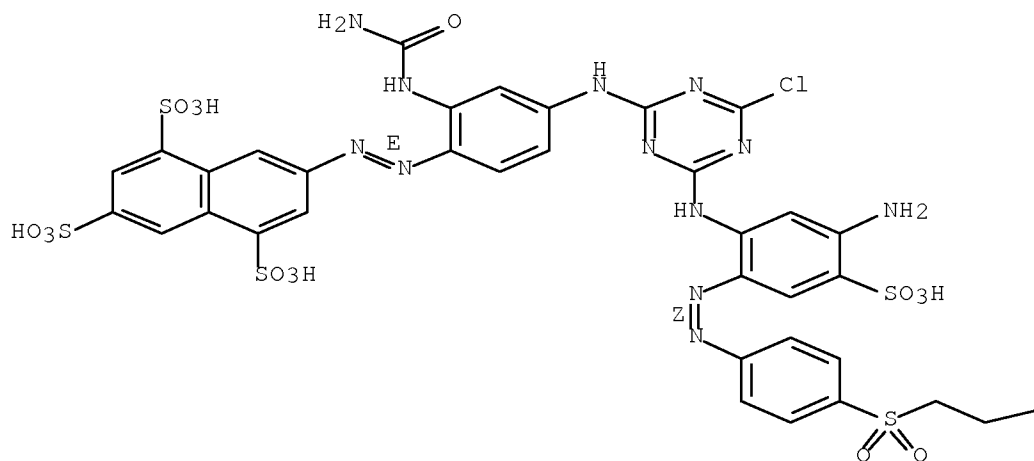
RN 1102416-77-2 HCAPLUS  
CN INDEX NAME NOT YET ASSIGNED

Double bond geometry as shown.



RN 1102416-78-3 HCAPLUS  
CN INDEX NAME NOT YET ASSIGNED

Double bond geometry as shown.



—OSO<sub>3</sub>H

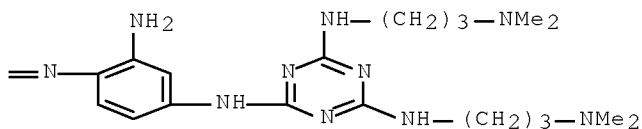
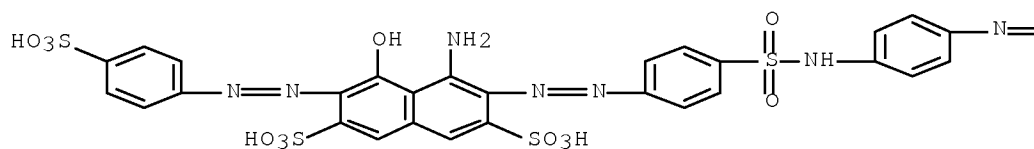
IT 440103-78-6P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

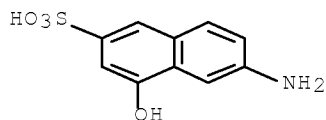
(acid dye for leather; production of anionic azo dyes with spacer arms)

RN 440103-78-6 HCAPLUS

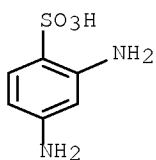
CN 2,7-Naphthalenedisulfonic acid, 4-amino-3-[2-[4-[[[4-[2-[2-amino-4-[[4,6-bis[[3-(dimethylamino)propyl]amino]-1,3,5-triazin-2-yl]amino]phenyl]diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-5-hydroxy-6-[2-(4-sulfophenyl)diazenyl]- (CA INDEX NAME)



IT 90-51-7, 6-Amino-4-hydroxy-2-naphthalenesulfonic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (coupling and diazo component; production of anionic azo  
 dyes with spacer arms)  
 RN 90-51-7 HCAPLUS  
 CN 2-Naphthalenesulfonic acid, 6-amino-4-hydroxy- (CA INDEX NAME)



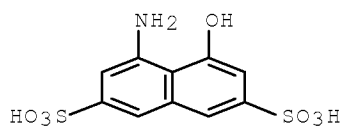
IT 88-63-1, m-Phenylenediamine-4-sulfonic acid 90-20-0,  
 4-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid 102-01-2,  
 Acetoacetanilide 591-27-5, m-Aminophenol 25711-72-2,  
 3-Ureidoaniline  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (coupling component; production of anionic azo dyes  
 with spacer arms)  
 RN 88-63-1 HCAPLUS  
 CN Benzenesulfonic acid, 2,4-diamino- (CA INDEX NAME)



RN 90-20-0 HCAPLUS

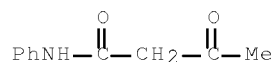
# 11/628659

CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy- (CA INDEX NAME)



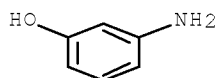
RN 102-01-2 HCAPLUS

CN Butanamide, 3-oxo-N-phenyl- (CA INDEX NAME)



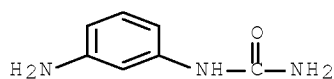
RN 591-27-5 HCAPLUS

CN Phenol, 3-amino- (CA INDEX NAME)



RN 25711-72-2 HCAPLUS

CN Urea, N-(3-aminophenyl)- (CA INDEX NAME)



IT 118-03-6, 2-Aminonaphthalene-3,6,8-trisulfonic acid

121-57-3 2494-89-5, 4-(2-Sulfatoethylsulfonyl)aniline

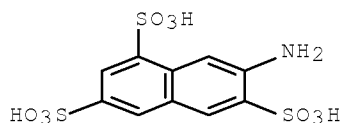
78696-32-9 440103-81-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(diazo component; production of anionic azo dyes with spacer arms)

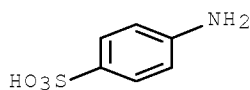
RN 118-03-6 HCAPLUS

CN 1,3,6-Naphthalenetrisulfonic acid, 7-amino- (CA INDEX NAME)

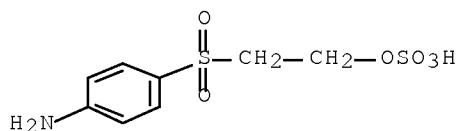


11/628659

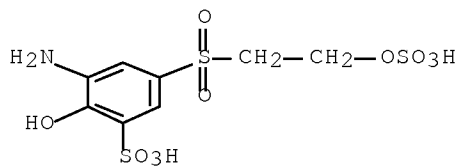
RN 121-57-3 HCAPLUS  
CN Benzenesulfonic acid, 4-amino- (CA INDEX NAME)



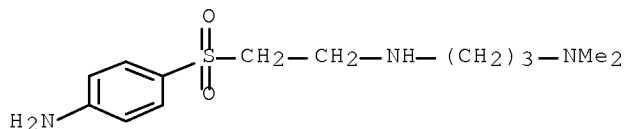
RN 2494-89-5 HCAPLUS  
CN Ethanol, 2-[(4-aminophenyl)sulfonyl]-, 1-(hydrogen sulfate) (CA INDEX NAME)



RN 78696-32-9 HCAPLUS  
CN Benzenesulfonic acid, 3-amino-2-hydroxy-5-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)



RN 440103-81-1 HCAPLUS  
CN 1,3-Propanediamine, N3-[2-[(4-aminophenyl)sulfonyl]ethyl]-N1,N1-dimethyl- (CA INDEX NAME)



IT 440103-80-0P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

11/628659

(metalized dye for leather; production of anionic azo  
dyes with spacer arms)

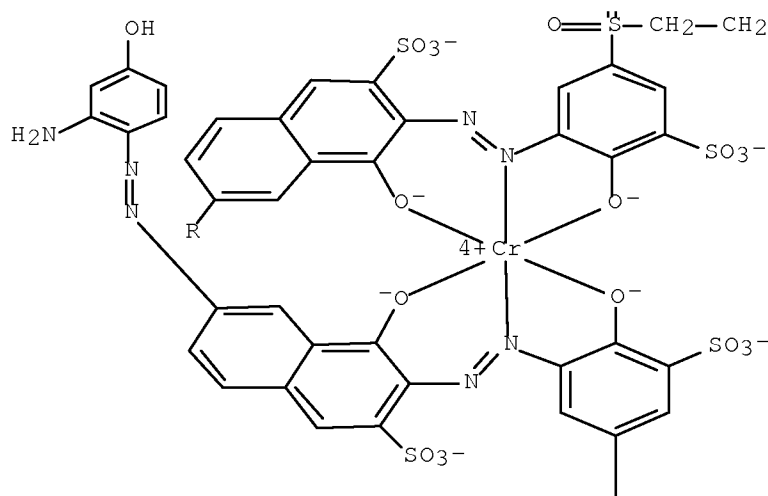
RN 440103-80-0 HCAPLUS

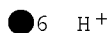
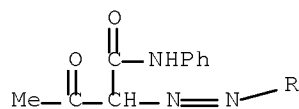
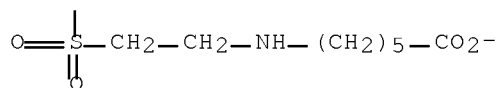
CN Chromate(6-), [6-[[2-[[3-[[7-[(2-amino-4-hydroxyphenyl)azo]-1-(hydroxy-  
κO)-3-sulfo-2-naphthalenyl]azo-κN1]-4-(hydroxy-κO)-5-  
sulfophenyl]sulfonyl]ethyl]amino]hexanoato(5-)] [6-[[2-[[4-(hydroxy-  
κO)-3-[[1-(hydroxy-κO)-7-[[2-oxo-1-  
[(phenylamino)carbonyl]propyl]azo]-3-sulfo-2-naphthalenyl]azo-κN1]-5-  
sulfophenyl]sulfonyl]ethyl]amino]hexanoato(5-)]-, hexahydrogen (9CI) (CA  
INDEX NAME)

PAGE 1-A



PAGE 2-A





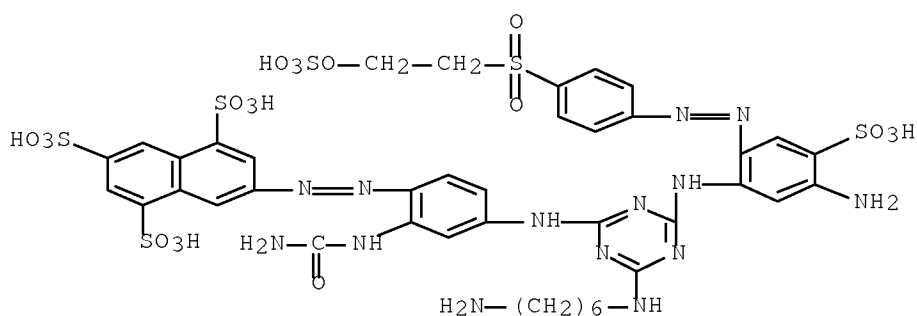
IT 440103-77-5P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(reactive dye for cotton; production of anionic azo dyes with spacer arms)

RN 440103-77-5 HCAPLUS

CN 1,3,5-Naphthalenetrisulfonic acid,  
 7-[2-[2-[(aminocarbonyl)amino]-4-[[4-[(6-aminohexyl)amino]-6-[[5-amino-4-sulfo-2-[2-[4-[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]phenyl]diazenyl]- (CA INDEX NAME)



IT 60-32-2, ε-Aminocaproic acid 108-45-2,

m-Phenylenediamine, reactions 108-77-0, Cyanuric chloride

109-55-7, N,N-Dimethyl-1,3-propanediamine 124-09-4,

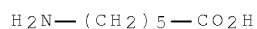
Hexamethylenediamine, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(starting material; production of anionic azo dyes with spacer arms)

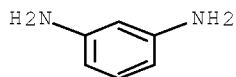
RN 60-32-2 HCAPLUS

CN Hexanoic acid, 6-amino- (CA INDEX NAME)

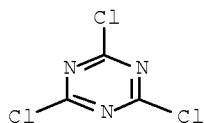




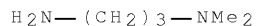
RN 108-45-2 HCAPLUS  
 CN 1,3-Benzenediamine (CA INDEX NAME)



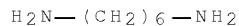
RN 108-77-0 HCAPLUS  
 CN 1,3,5-Triazine, 2,4,6-trichloro- (CA INDEX NAME)



RN 109-55-7 HCAPLUS  
 CN 1,3-Propanediamine, N1,N1-dimethyl- (CA INDEX NAME)

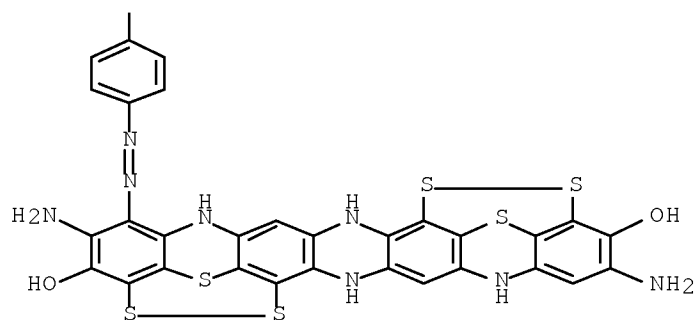
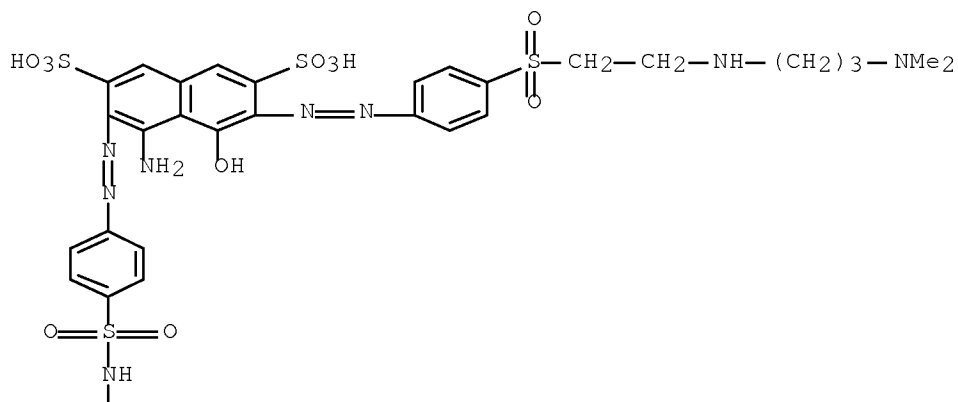


RN 124-09-4 HCAPLUS  
 CN 1,6-Hexanediamine (CA INDEX NAME)

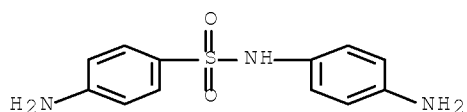


IT 440103-79-7P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (sulfur dye for leather; production of anionic azo dyes with spacer arms)

RN 440103-79-7 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid, 4-amino-3-[2-[4-[[[4-[(2,11-diamino-7,9,16,18-tetrahydro-3,12-dihydroxy-4,6:13,15-diepidithiopyrazino[2,3-b:5,6-b']diphenothiazin-1-yl)azo]phenyl]amino]sulfonyl]phenyl]diazenyl]-6-[2-[4-[[2-[3-(dimethylamino)propyl]amino]ethyl]sulfonyl]phenyl]diazenyl]-5-hydroxy- (CA INDEX NAME)



IT 16803-97-7, 4,4'-Diaminosulfanilide  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (tetrazo component; production of anionic azo dyes with  
 spacer arms)  
 RN 16803-97-7 HCAPLUS  
 CN Benzenesulfonamide, 4-amino-N-(4-aminophenyl)- (CA INDEX NAME)



IC ICM D06P003-32  
 ICS C09B001-00; D06P001-00; C09B047-04; C09B003-00; C09B005-00;  
 C09B006-00

INCL 008436000

CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
Section cross-reference(s): 28, 40, 45

ST anionic azo dye spacer arm prodn use

IT Azo dyes  
(acid; production of anionic azo dyes with spacer arms for leather and cotton)

IT Textiles  
(cotton; production of anionic azo dyes with spacer arms for leather and cotton)

IT Leather  
(production of anionic azo dyes with spacer arms for leather and cotton)

IT 1102416-75-0 1102416-76-1 1102416-77-2 1102416-78-3  
RL: PRPH (Prophetic)  
(Anionic azo dyes and their use on cotton and leather)

IT 440103-78-6P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(acid dye for leather; production of anionic azo dyes with spacer arms)

IT 90-51-7, 6-Amino-4-hydroxy-2-naphthalenesulfonic acid  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(coupling and diazo component; production of anionic azo dyes with spacer arms)

IT 88-63-1, m-Phenylenediamine-4-sulfonic acid 90-20-0, 4-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid 102-01-2, Acetoacetanilide 591-27-5, m-Aminophenol 1326-82-5, C.I. Sulfur Black 1 25711-72-2, 3-Ureidoaniline  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(coupling component; production of anionic azo dyes with spacer arms)

IT 118-03-6, 2-Aminonaphthalene-3,6,8-trisulfonic acid 121-57-3 2494-89-5, 4-(2-Sulfatoethylsulfonyl)aniline 78696-32-9 440103-81-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(diazo component; production of anionic azo dyes with spacer arms)

IT 440103-80-0P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(metalized dye for leather; production of anionic azo dyes with spacer arms)

IT 440103-77-5P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(reactive dye for cotton; production of anionic azo dyes with spacer arms)

IT 60-32-2, ε-Aminocaproic acid 108-45-2, m-Phenylenediamine, reactions 108-77-0, Cyanuric chloride 109-55-7, N,N-Dimethyl-1,3-propanediamine 124-09-4, Hexamethylenediamine, reactions 17593-70-3, Chromium acetate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material; production of anionic azo dyes with spacer arms)

IT 440103-79-7P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material

use); PREP (Preparation); USES (Uses)  
 (sulfur dye for ~~leather~~; production of anionic azo  
 dyes with spacer arms)

IT 16803-97-7, 4,4'-Diaminosulfanilide

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (tetrazo component; production of anionic azo dyes with  
 spacer arms)

L31 ANSWER 9 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:265511 HCAPLUS Full-text

DOCUMENT NUMBER: 134:297164

TITLE: ~~Reactive dyes~~ with high exhaustion  
 and fixation values

INVENTOR(S): Broadbent, Peter Jeffrey; Lewis, David Malcolm;  
 Genain, Gilles Yves Marie Fernand; He, Wei Dong;  
 Yousaf, Taher Iqbal

PATENT ASSIGNEE(S): The Procter & Gamble Company, USA

SOURCE: PCT Int. Appl., 43 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE           |
|--|------|----------|-----------------|----------------|
| WO 2001025338  | A1   | 20010412 | WO 2000-US26975 | 20000929 <--   |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,<br>CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,<br>HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,<br>LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,<br>SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,<br>YU, ZA, ZW |      |          |                 |                |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,<br>DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,<br>CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG   |      |          |                 |                |
| EP 1218453   | A1   | 20020703 | EP 2000-967177  | 20000929 <--   |
| EP 1218453   | B1   | 20050511 |                 |                |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,<br>IE, SI, LT, LV, FI, RO, MK, CY, AL   |      |          |                 |                |
| JP 2003511511  | T    | 20030325 | JP 2001-528497  | 20000929 <--   |
| JP 3971184   | B2   | 20070905 |                 |                |
| CN 1195804   | C    | 20050406 | CN 2000-816561  | 20000929 <--   |
| AT 295394  | T    | 20050515 | AT 2000-967177  | 20000929 <--   |
| US 6790943   | B1   | 20040914 | US 2002-89340   | 20020327 <--   |
| MX 2002003288  | A    | 20021004 | MX 2002-3288    | 20020401 <--   |
| PRIORITY APPLN. INFO.:   |      |          | GB 1999-23328   | A 19991001 <-- |
|  |      |          | GB 2000-6969    | A 20000322 <-- |
|  |      |          | GB 2000-9842    | A 20000425 <-- |
|  |      |          | WO 2000-US26975 | W 20000929 <-- |

OTHER SOURCE(S): MARPAT 134:297164

AB A dye comprises (a)  $\geq 1$  chromophore and (b)  $\geq 1$  fiber- ~~reactive~~ group SO<sub>2</sub>C<sub>2</sub>H<sub>4</sub>Y, where Y is derived from a hydrated aldehyde (especially a hydrolyzed sugar), a hydrated ketone or orthoformic acid, and is attached via a hemiacetal linkage. The dyes have high exhaustion values, high fixation values and high efficiency values and show significant improvements in terms of reducing the amount of spent dye in effluent, increasing dye affinity to the substrate, increasing the fraction of dye-substrate covalent bonding, increasing the ability to dye substrates at room temperature, decreasing the amount of dye that is removed during the post-~~dyeing~~ soaping-off process and reduction of staining of

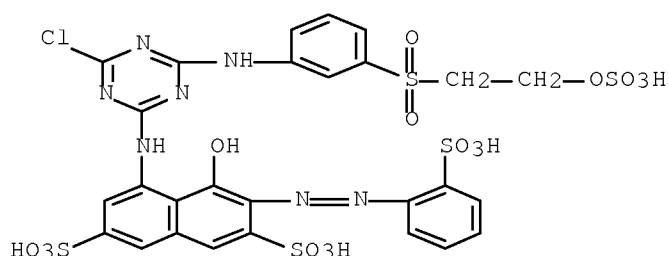
# 11/628659

adjacent white fabrics during laundering. In addition, the dyes of this structure provide more intense dyeings and require less salt for dyeing cotton substrates. They are conveniently prepared, e.g., by reaction of SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OSO<sub>3</sub>H groups in conventional reactive dyes or intermediates with, e.g., acid-hydrolyzed glucose. A dye thus prepared from Remazol Red RB and glucose showed 97.32% exhaustion and 97.21% fixation in dyeing cotton at 50°.

IT 23354-52-1DF, Sumifix Supra Brilliant Red 2BF, reaction products with acid-hydrolyzed glucose 145017-98-7DF, Remazol Red RB, reaction products with acid-hydrolyzed glucose or sucrose or orthoformic acid 333764-41-3P 333764-43-5P 333800-01-4P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation of reactive dyes with high exhaustion and fixation values)

RN 23354-52-1 HCAPLUS

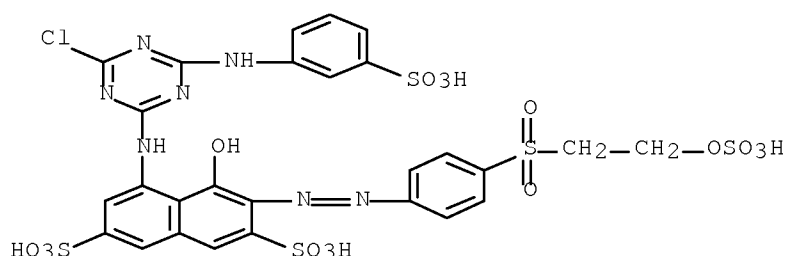
CN 2,7-Naphthalenedisulfonic acid, 5-[[4-chloro-6-[[3-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-4-hydroxy-3-[2-(2-sulfophenyl)diazenyl]-, sodium salt (1:4) (CA INDEX NAME)



●4 Na

RN 145017-98-7 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 5-[[4-chloro-6-[(3-sulfophenyl)amino]-1,3,5-triazin-2-yl]amino]-4-hydroxy-3-[2-[4-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]diazenyl]-, sodium salt (1:4) (CA INDEX NAME)



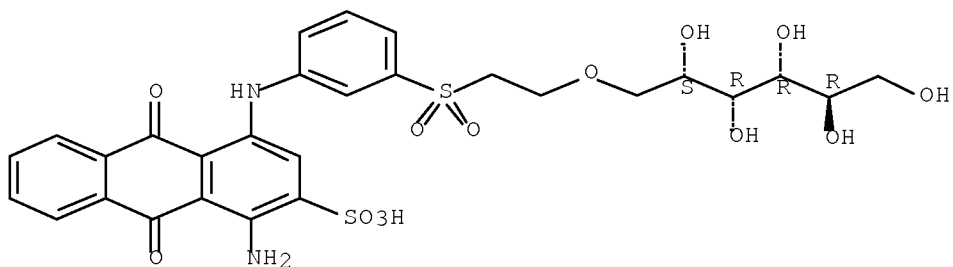
●4 Na

RN 333764-41-3 HCAPLUS

11/628659

CN D-Glucitol, 1-O-[2-[[3-[(4-amino-9,10-dihydro-9,10-dioxo-3-sulfo-1-anthracenyl)amino]phenyl]sulfonyl]ethyl]-, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.

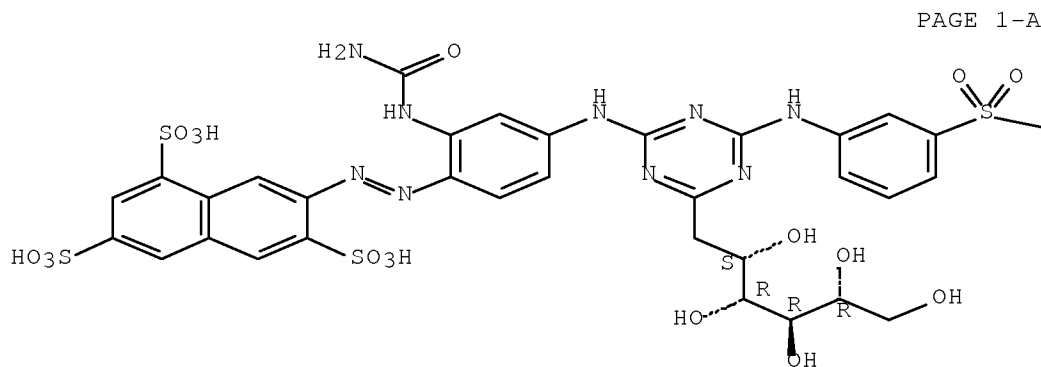


RN 333764-43-5 HCAPLUS

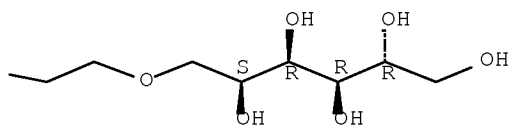
CN D-Glucitol, 1-O-[2-[[3-[[4-[[3-[(aminocarbonyl)amino]-4-[(3,6,8-trisulfo-2-naphthalenyl)azo]phenyl]amino]-6-(1-deoxy-D-glucitol-1-yl)-1,3,5-triazin-2-yl]amino]phenyl]sulfonyl]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry unknown.



PAGE 1-B

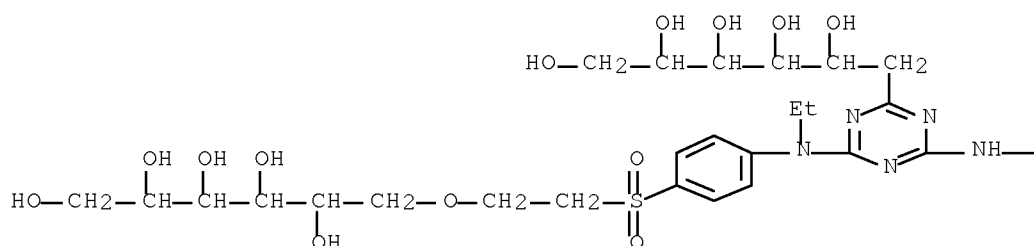


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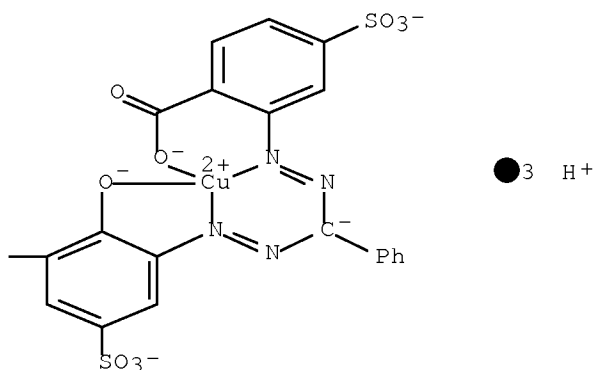
RN 333800-01-4 HCAPLUS

CN Cuprate(3-), [1-O-[2-[4-[4-[3-[[[2-(carboxy-κO)-5-sulfophenyl]azo-κN2]phenylmethyl]azo-κN1]-2-(hydroxy-κO)-5-sulfophenyl]amino]-6-(1-deoxy-D-glucitol-1-yl)-1,3,5-triazin-2-yl]ethylamino]phenyl]sulfonyl]ethyl]-D-glucitolato(5-)]-, trihydrogen, (SP-4-3)- (9CI) (CA INDEX NAME)

PAGE 1-A



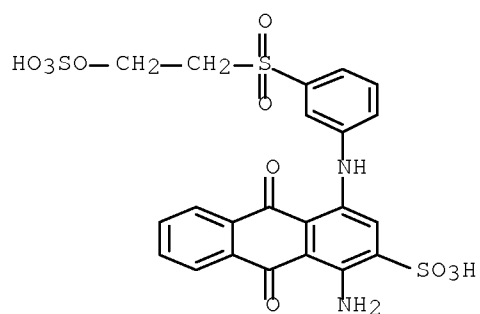
PAGE 1-B



IT 2580-78-1, Remazol Brilliant Blue R Special 86293-57-4,  
Sumifix Supra Yellow 3RF 89933-65-3, Sumifix Supra Blue BRF  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of reactive dyes with high exhaustion and  
fixation values)

RN 2580-78-1 HCAPLUS

CN 2-Anthracenesulfonic acid, 1-amino-9,10-dihydro-9,10-dioxo-4-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-, sodium salt (1:2) (CA INDEX NAME)

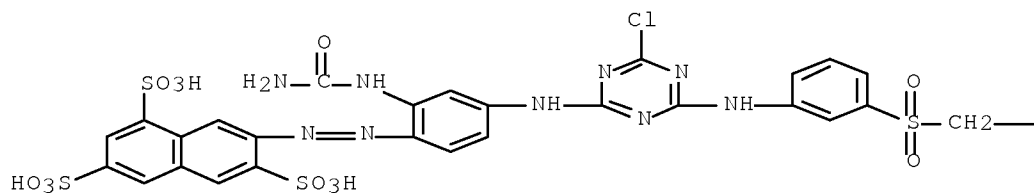


●2 Na

RN 86293-57-4 HCAPLUS

CN 1,3,6-Naphthalenetrisulfonic acid,  
 7-[2-[2-[(aminocarbonyl)amino]-4-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]phenyl]diazenyl]- (CA INDEX NAME)

PAGE 1-A



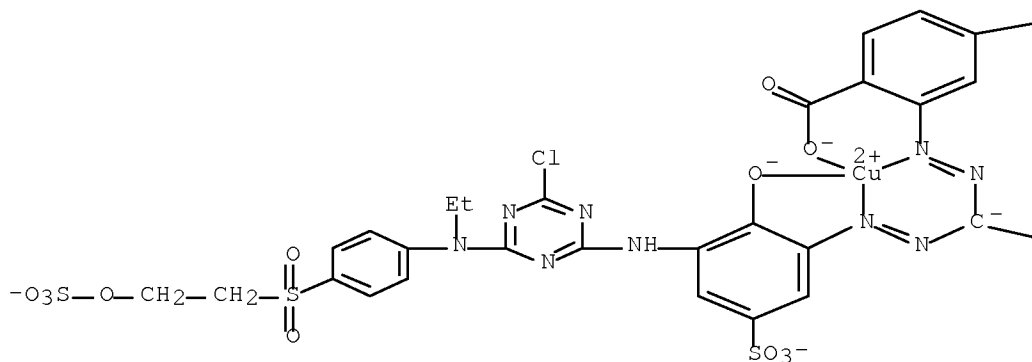
PAGE 1-B

—CH<sub>2</sub>—OSO<sub>3</sub>H

RN 89933-65-3 HCAPLUS

CN Cuprate(4-), [2-[2-[[2-[3-[[4-chloro-6-[ethyl[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-(hydroxy-κO)-5-sulfophenyl]diazenyl-κN2]phenylmethyl]diazenyl-κN1]-4-sulfobenzoato(6-)-κO]-, hydrogen (1:4), (SP-4-3)- (CA INDEX NAME)





—SO<sub>3</sub><sup>-</sup>

●<sub>4</sub> H<sup>+</sup>

—Ph

- IC ICM C09B062-78  
ICS D06P003-00; D06P001-38; C09B062-503; C09B062-44
- CC 41-1 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
Section cross-reference(s): 40, 45, 62
- ST ~~reactive dye~~ vinyl sulfone precursor; acid hydrolyzed sugar leaving group
- IT Carbohydrates, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(aldoses, hydrated; preparation of ~~reactive dyes~~ with high exhaustion and fixation values)
- IT Textiles  
(cotton; ~~reactive dyes~~ having high exhaustion and fixation values for)
- IT Hair preparations  
(~~dyes~~; ~~reactive dyes~~ having high exhaustion and fixation values)
- IT Carbohydrates, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(ketoses, hydrated; preparation of ~~reactive dyes~~ with high exhaustion and fixation values)
- IT Dyeing  
(of hair or ~~leather~~ or textile fibers with ~~reactive dyes~~ having high exhaustion and fixation values)

- IT **Reactive dyes**  
(preparation of **reactive dyes** with high exhaustion and fixation values)
- IT **Leather**  
Silk  
Wool  
(**reactive dyes** having high exhaustion and fixation values for)
- IT Polyamide fibers, miscellaneous  
RL: MSC (Miscellaneous)  
(**reactive dyes** having high exhaustion and fixation values for)
- IT 12236-86-1DP, Remazol Turquoise Blue G, reaction products with acid-hydrolyzed glucose or sucrose ~~23354-52-1DP~~, Sumifix Supra Brilliant Red 2BF, reaction products with acid-hydrolyzed glucose 115682-09-2DP, Sumifix Supra Turquoise BlueBGF, reaction products with acid-hydrolyzed glucose 140876-11-5DP, Cibacron Red C2G, reaction products with acid-hydrolyzed glucose 140876-15-9DP, Remazol Yellow 3RS, reaction products with acid-hydrolyzed glucose or sucrose ~~145017-98-7DP~~, Remazol Red RB, reaction products with acid-hydrolyzed glucose or sucrose or orthoformic acid 149315-82-2DP, Cibacron Blue CR, reaction products with acid-hydrolyzed glucose 195739-93-6DP, Cibacron Yellow C2R, reaction products with acid-hydrolyzed glucose ~~333764-41-3P 333764-43-5P 333800-01-4P~~  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation of **reactive dyes** with high exhaustion and fixation values)
- IT 50-69-1, Ribose 50-99-7, Glucose, reactions 57-48-7, Fructose, reactions 57-50-1, Sucrose, reactions 58-86-6, Xylose, reactions 59-23-4, Galactose, reactions 147-81-9, Arabinose 463-78-5, Orthoformic acid 533-67-5, Deoxyribose ~~2580-78-1~~, Remazol Brilliant Blue R Special 3458-28-4, Mannose 3615-41-6, Rhamnose 5987-68-8, Altrose 6038-51-3, Allose 30077-17-9, Talose ~~86293-57-4~~, Sumifix Supra Yellow 3RF ~~89933-65-3~~, Sumifix Supra Blue BRF  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of **reactive dyes** with high exhaustion and fixation values)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 10 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:265509 HCAPLUS Full-text

DOCUMENT NUMBER: 134:282130

TITLE: **Reactive dye** compounds and their use

INVENTOR(S): Lewis, David Malcolm; He, Dong Wei; Yousaf, Taher Iqbal; Genain, Gilles Yves Marie Fernand

PATENT ASSIGNEE(S): The Procter & Gamble Company, USA

SOURCE: PCT Int. Appl., 22 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|---------------|------|----------|-----------------|--------------|
| -----         | ---- | -----    | -----           | -----        |
| WO 2001025336 | A1   | 20010412 | WO 2000-US26911 | 20000929 <-- |

11/628659

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,  
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,  
LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,  
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,  
YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,  
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1218451 A1 20020703 EP 2000-965537 20000929 <--  
EP 1218451 B1 20031210

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL

JP 2003511509 T 20030325 JP 2001-528495 20000929 <--  
AT 256167 T 20031215 AT 2000-965537 20000929 <--  
CN 1182201 C 20041229 CN 2000-816522 20000929 <--  
US 6736864 B1 20040518 US 2002-89334 20020327 <--

PRIORITY APPLN. INFO.: GB 1999-23332 A 19991001 <--  
WO 2000-US26911 W 20000929 <--

OTHER SOURCE(S): MARPAT 134:282130

AB A ~~reactive dye~~ compound comprises: (a) at least one chromophore moiety; (b) at least one SO<sub>2</sub>C<sub>2</sub>H<sub>4</sub> group which is attached to the chromophore moiety either directly via the sulfur atom of the SO<sub>2</sub>C<sub>2</sub>H<sub>4</sub> group or via a linking group; characterized in that at least one SO<sub>2</sub>C<sub>2</sub>H<sub>4</sub> group is substituted on its terminal carbon atom with at least one Y group wherein Y is a phosphonate or borate derivative. The compds. herein have high exhaustion, fixation, and efficiency values and show significant improvements in terms of reducing spent dyes in the effluent, increasing dye affinity to the substrate, increasing the dye-substrate covalent bonding, increasing the ability to dye substrates at room temperature, decreasing the amount of dye removed during the post ~~dyeing~~ soaping off process, and reducing the staining of adjacent white fabrics. In addition, the dye compds. provide more intense ~~dyeings~~ and require lower levels of salt for ~~dyeing~~ cotton substrates. An example was given in which the reaction product of Remazol Brilliant Blue R Special and acetodiphosphonic acid was prepared and used to dye cotton deep blue.

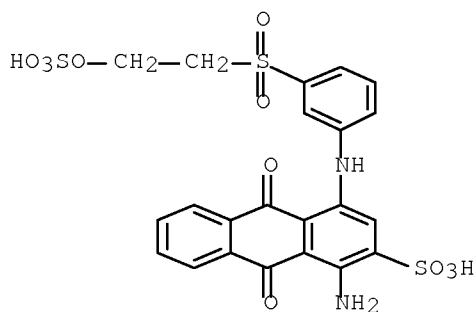
IT 2580-78-1DP, Remazol Brilliant Blue R Special, reaction products with acetodiphosphonic acid

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(blue ~~dye~~; production of ~~reactive dyes~~ with improved application and use properties)

RN 2580-78-1 HCAPLUS

CN 2-Anthracenesulfonic acid, 1-amino-9,10-dihydro-9,10-dioxo-4-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-, sodium salt (1:2) (CA INDEX NAME)



●2 Na

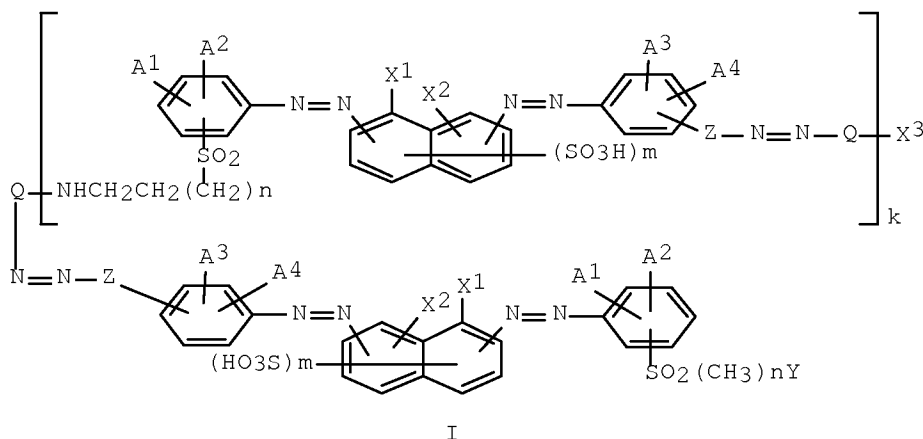
- IC ICM C09B062-022  
ICS D06P003-00; D06P001-38; C09B062-503; C09B062-443
- CC 41-4 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
Section cross-reference(s): 40, 45, 62
- ST acetodiphosphonic acid treated reactive dye prodn
- IT Buffers  
(in reactive dyeing with acetodiphosphonic acid-treated dyes)
- IT Textiles  
(polyamide-wool; reactive dyeing with acetodiphosphonic acid-treated dyes)
- IT Cotton fibers  
Hair  
Leather  
Silk  
Wool  
(reactive dyeing with acetodiphosphonic acid-treated dyes)
- IT Polyamide fibers, processes  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(reactive dyeing with acetodiphosphonic acid-treated dyes)
- IT Reactive dyes  
(vinyl sulfone; production of reactive dyes with improved application and use properties)
- IT Reactive dyeing  
(with prepared acetodiphosphonic acid-treated vinyl sulfone dyes)
- IT 2580-78-1DP, Remazol Brilliant Blue R Special, reaction products with acetodiphosphonic acid 2809-21-4DP, 1-Hydroxyethylidenediphosphonic acid, reaction products with Remazol Brilliant Blue R Special  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(blue dye; production of reactive dyes with improved application and use properties)
- IT 77-92-9, Citric acid, uses 110-16-7, Maleic acid, uses 110-17-8, Fumaric acid, uses 6915-15-7, Malic acid  
RL: NUU (Other use, unclassified); USES (Uses)  
(buffer in reactive dyeing with acetodiphosphonic acid-treated dyes)

REFERENCE COUNT: 7

THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 11 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 1999:791820 HCAPLUS Full-text  
DOCUMENT NUMBER: 132:23858  
TITLE: Tris- and polyazo reactive  
dyes, their mixtures, their production and  
uses  
INVENTOR(S): Patsch, Manfred; Scholz, Gerhard  
PATENT ASSIGNEE(S): BASF A.-G., Germany  
SOURCE: Ger. Offen., 18 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.   | KIND | DATE     | APPLICATION NO.  | DATE           |
|--|------|----------|------------------|----------------|
| DE 19825202  | A1   | 19991209 | DE 1998-19825202 | 19980605 <--   |
| WO 9964520   | A1   | 19991216 | WO 1999-EP3535   | 19990522 <--   |
| W: BR, IN, KR, MX, TR, US  |      |          |                  |                |
| RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE |      |          |                  |                |
| EP 1086180   | A1   | 20010328 | EP 1999-955488   | 19990522 <--   |
| R: DE, ES, GB, IT  |      |          |                  |                |
| PRIORITY APPLN. INFO.:   |      |          | DE 1998-19825202 | A 19980605 <-- |
|  |      |          | WO 1999-EP3535   | W 19990522 <-- |
| OTHER SOURCE(S): MARPAT 132:23858  |      |          |                  |                |
| GI   |      |          |                  |                |



AB Vinyl sulfone reactive azo dyes [I; A1, A2, A3, A4 = H, sulfo; Q = aromatic or heterocyclic connecting group; X1, X2 = 1 each of hydroxy or amino/substituted amino; X3 = H, amino; Y = vinyl or group convertible thereto; Z = direct bond or organic connecting group; k = 0 or (when X3 = amino) 1-4; m = 1, 2; n = 0, 1] are obtained which have good substantivity, especially on leather. In an example, p-(2-hydroxyethylsulfonyl)aniline → 1-hydroxy-8-amino-3,6-naphthalenedisulfonic acid was prepared and coupled with tetrazotized 4,4'-diaminodiphenylsulfamide; coupling of the product with m-phenylenediamine gave a black dye ( $\lambda_{\text{max}}$  399, 472, 608 nm).

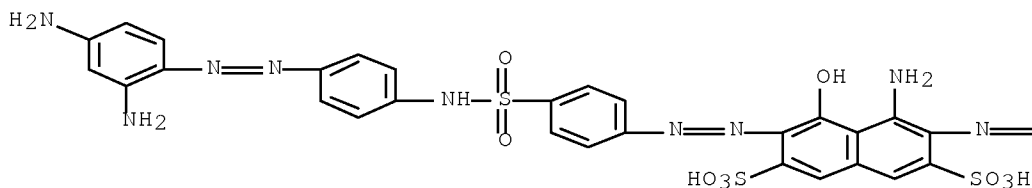
IT 252011-02-2P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(black dye; production of polyazo reactive dyes)

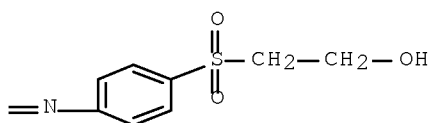
RN 252011-02-2 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[4-[[[4-[2-(2,4-diaminophenyl)diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-5-hydroxy-3-[2-[4-[(2-hydroxyethyl)sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

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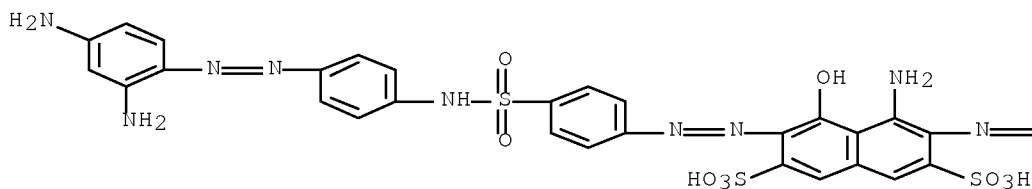
IT 252011-06-6P 252011-07-7P 252011-08-8P

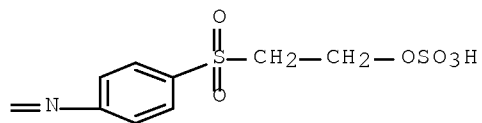
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(black dye; production of polyazo reactive dyes for leather)

RN 252011-06-6 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[4-[[[4-[2-(2,4-diaminophenyl)diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-5-hydroxy-3-[2-[4-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

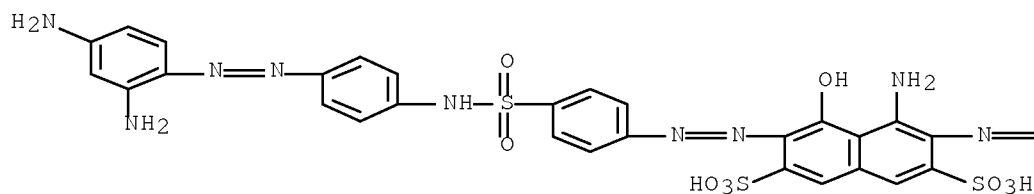
PAGE 1-A



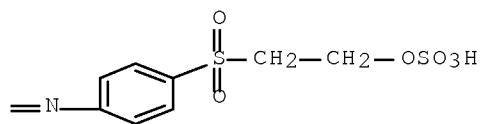


RN 252011-07-7 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[4-[[[4-[2-(2,4-diaminophenyl)diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-5-hydroxy-3-[2-[4-[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-, sodium salt (1:3) (CA INDEX NAME)

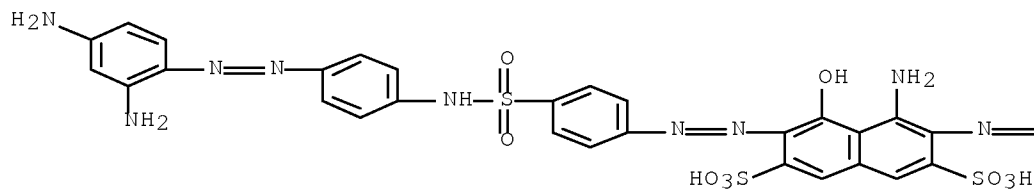


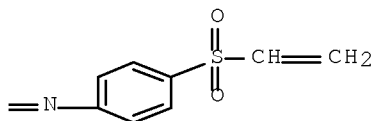
● 3 Na



RN 252011-08-8 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[4-[[[4-[2-(2,4-diaminophenyl)diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-3-[2-[4-(ethenylsulfonyl)phenyl]diazenyl]-5-hydroxy- (CA INDEX NAME)



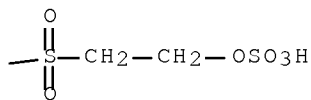
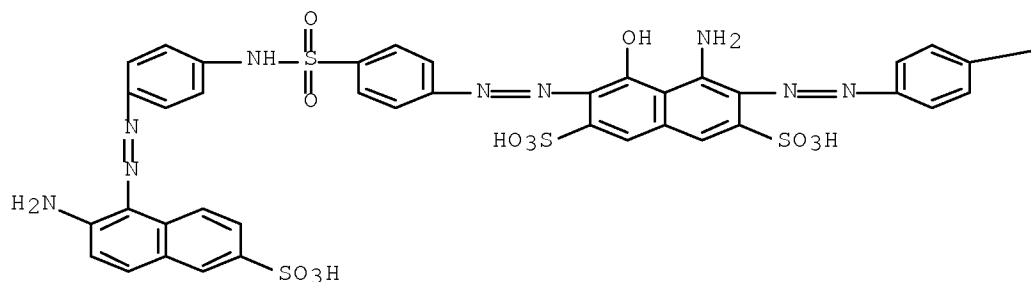


IT 252011-13-5P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (blue dye; production of polyazo reactive dyes for leather)

RN 252011-13-5 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[4-[[[4-[2-(2-amino-6-sulfo-1-naphthalenyl)diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-5-hydroxy-3-[2-[4-[2-(sulfoxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)



IT 252011-15-7P 252011-16-8P

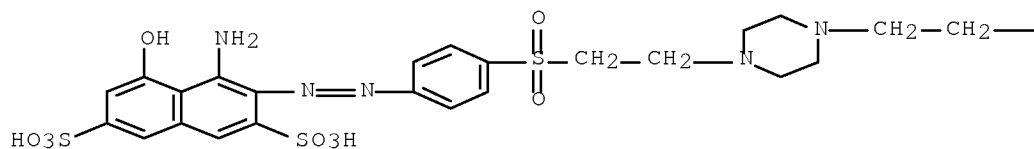
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (coupling component; production of polyazo reactive dyes)

RN 252011-15-7 HCAPLUS

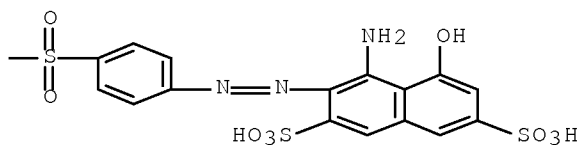
CN 2,7-Naphthalenedisulfonic acid, 3,3'-[1,4-piperazinediylbis(2,1-ethanediylsulfonyl-4,1-phenyleneazo)]bis[4-amino-5-hydroxy- (9CI) (CA INDEX NAME)



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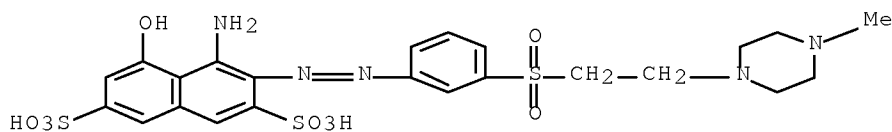


PAGE 1-B



RN 252011-16-8 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3-[2-[3-[[2-(4-methyl-1-piperazinyl)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

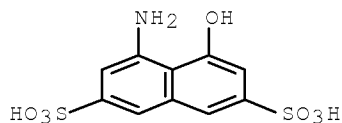


IT 90-20-0 108-45-2, 1,3-Benzenediamine, reactions  
 119-18-6 2243-67-6, 2,6-Diaminonaphthalene  
 13269-73-3

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (coupling component; production of polyazo reactive  
 dyes)

RN 90-20-0 HCAPLUS

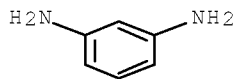
CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy- (CA INDEX NAME)



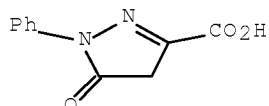
RN 108-45-2 HCAPLUS

CN 1,3-Benzenediamine (CA INDEX NAME)

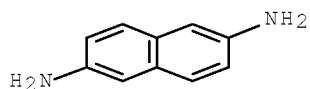
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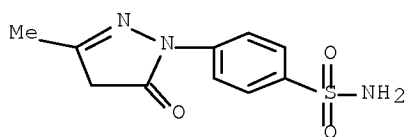
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CN 1H-Pyrazole-3-carboxylic acid, 4,5-dihydro-5-oxo-1-phenyl- (CA INDEX NAME)



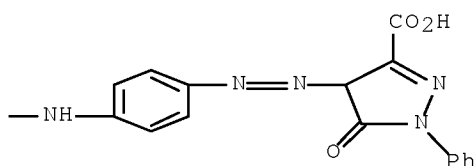
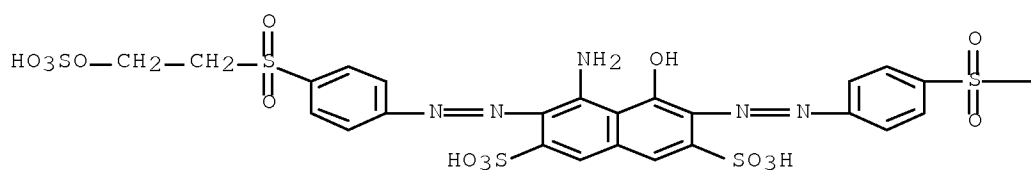
RN 2243-67-6 HCAPLUS  
CN 2,6-Naphthalenediamine (CA INDEX NAME)



RN 13269-73-3 HCAPLUS  
CN Benzenesulfonamide, 4-(4,5-dihydro-3-methyl-5-oxo-1H-pyrazol-1-yl)- (CA INDEX NAME)



IT 252011-09-9P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(dark green dye; production of polyazo reactive dyes for leather)  
RN 252011-09-9 HCAPLUS  
CN 1H-Pyrazole-3-carboxylic acid, 4-[2-[4-[[[4-[2-[8-amino-1-hydroxy-3,6-disulfo-7-[2-[4-[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-2-naphthalenyl]diazenyl]phenyl]sulfonyl]amino]phenyl]diazenyl]-4,5-dihydro-5-oxo-1-phenyl- (CA INDEX NAME)

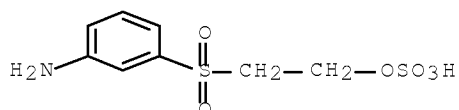


IT 2494-88-4, 3-(2-Sulfatoethylsulfonyl)aniline 2494-89-5,  
p-(2-Sulfatoethylsulfonyl)aniline 5246-58-2,  
p-(2-Hydroxyethylsulfonyl)aniline

RL: RCT (Reactant); RACT (Reactant or reagent)  
(diazo component; production of polyazo reactive  
dyes)

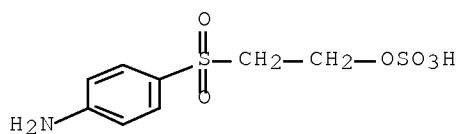
RN 2494-88-4 HCAPLUS

CN Ethanol, 2-[(3-aminophenyl)sulfonyl]-, 1-(hydrogen sulfate) (CA INDEX  
NAME)



RN 2494-89-5 HCAPLUS

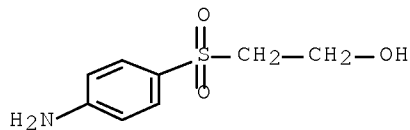
CN Ethanol, 2-[(4-aminophenyl)sulfonyl]-, 1-(hydrogen sulfate) (CA INDEX  
NAME)



RN 5246-58-2 HCAPLUS

11/628659

CN Ethanol, 2-[(4-aminophenyl)sulfonyl]- (CA INDEX NAME)

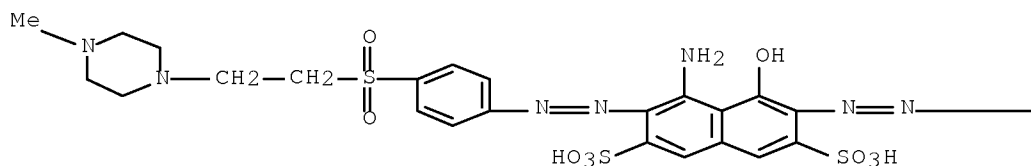


IT 252011-03-3P 252011-04-4P 252011-05-5P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (dye; production of polyazo reactive dyes)

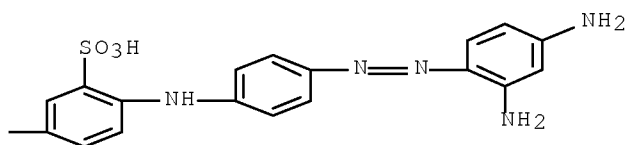
RN 252011-03-3 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[4-[[4-[2-(2,4-diaminophenyl)diazenyl]phenyl]amino]-3-sulfophenyl]diazenyl]-5-hydroxy-3-[2-[4-[[2-(4-methyl-1-piperazinyl)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

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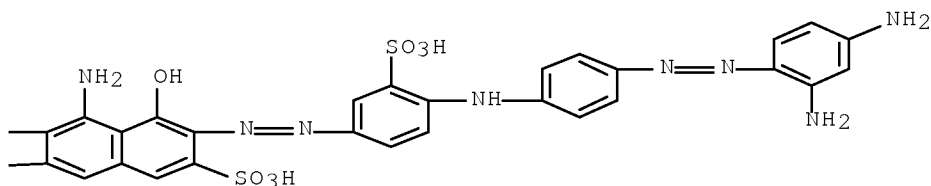
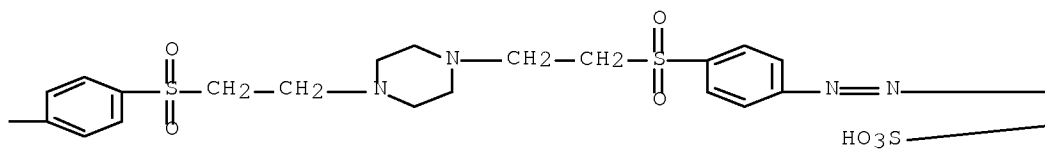
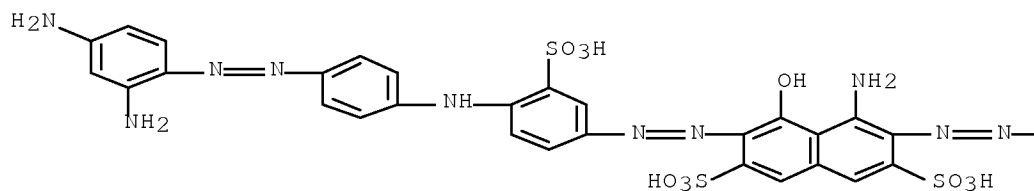


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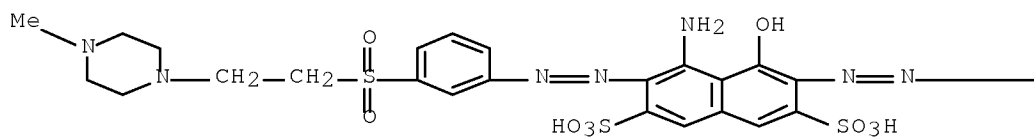
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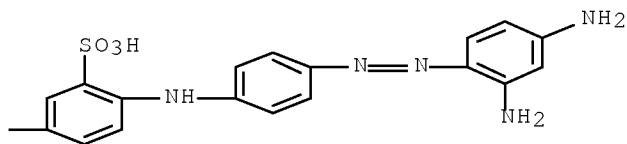
CN 2,7-Naphthalenedisulfonic acid, 3,3'-[1,4-piperazinediylbis(2,1-ethanediylsulfonyl-4,1-phenyleneazo)]bis[4-amino-6-[[4-[[4-[(2,4-diaminophenyl)azo]phenyl]amino]-3-sulfophenyl]azo]-5-hydroxy- (9CI) (CA INDEX NAME)



RN 252011-05-5 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[4-[[4-[2-(2,4-diaminophenyl)diazenyl]phenyl]amino]-3-sulfophenyl]diazenyl]-5-hydroxy-3-[2-[3-[[2-(4-methyl-1-piperazinyl)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)



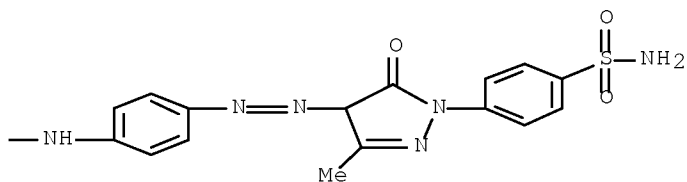
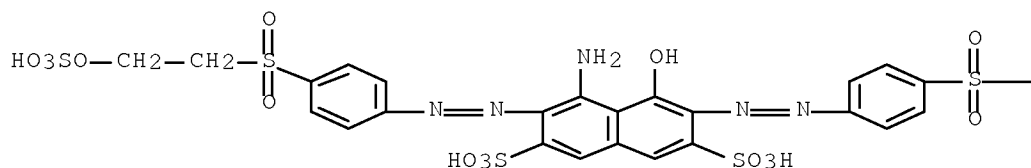


IT 252011-10-2P 252011-11-3P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(green dye; production of polyazo reactive dyes for leather)

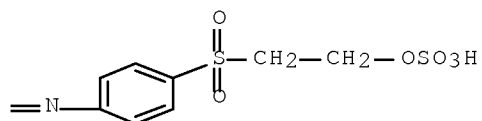
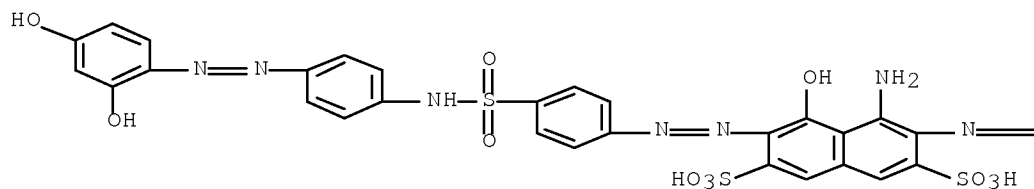
RN 252011-10-2 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[4-[[[4-[2-[1-[4-(aminosulfonyl)phenyl]-4,5-dihydro-3-methyl-5-oxo-1H-pyrazol-4-yl]diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-5-hydroxy-3-[2-[4-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

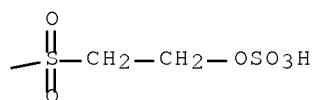
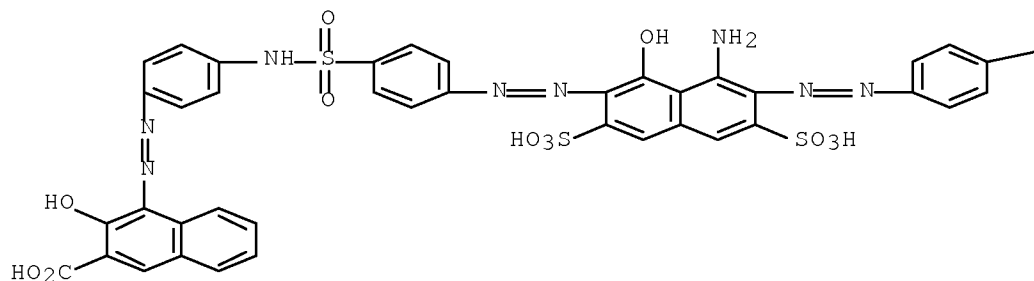


RN 252011-11-3 HCAPLUS

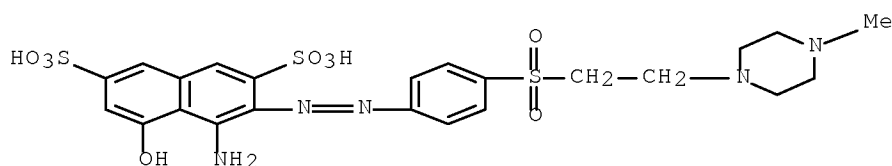
CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[4-[[[4-[2-(2,4-dihydroxyphenyl)diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-5-hydroxy-3-[2-[4-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)



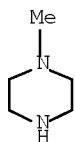
IT 252011-12-4P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (navy blue dye; production of polyazo reactive dyes for leather)  
 RN 252011-12-4 HCAPLUS  
 CN 2-Naphthalenecarboxylic acid, 4-[2-[4-[[4-[2-[8-amino-1-hydroxy-3,6-disulfo-7-[2-[4-[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-2-naphthalenyl]diazenyl]phenyl]sulfonyl]amino]phenyl]diazenyl]-3-hydroxy- (CA INDEX NAME)



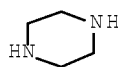
IT 252011-14-6P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (red coupling component; production of polyazo reactive dyes)  
 RN 252011-14-6 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3-[2-[4-[[2-(4-methyl-1-piperazinyl)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)



IT 109-01-3, N-Methylpiperazine 110-85-0, Piperazine, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (starting material; production of polyazo reactive dyes)  
 RN 109-01-3 HCAPLUS  
 CN Piperazine, 1-methyl- (CA INDEX NAME)

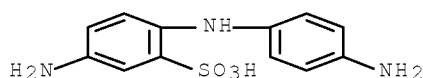


RN 110-85-0 HCAPLUS  
 CN Piperazine (CA INDEX NAME)

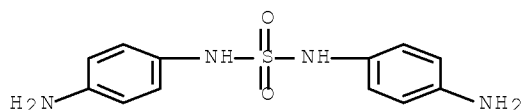


IT 119-70-0 106003-92-3, 4,4'-Diaminodiphenylsulfamide  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (tetrazo component; production of polyazo reactive dyes)  
 RN 119-70-0 HCAPLUS  
 CN Benzenesulfonic acid, 5-amino-2-[(4-aminophenyl)amino]- (CA INDEX NAME)





RN 106003-92-3 HCAPLUS  
 CN Sulfamide, N,N'-bis(4-aminophenyl)- (CA INDEX NAME)



IC ICM C09B062-513  
 ICS C09B035-38; C09B043-32; C09B067-22; D06P003-32; D06P001-384;  
 C07C309-50  
 ICA D06P003-10; D06P003-66; C07C317-32  
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic  
 Sensitizers)  
 Section cross-reference(s): 45  
 ST polyazo reactive dye prodn leather  
 IT Reactive dyeing  
 (of leather and other substrates with prepared polyazo  
 dyes)  
 IT Leather  
 (production of polyazo reactive dyes for)  
 IT Reactive azo dyes  
 (vinyl sulfone; production of polyazo reactive  
 dyes for leather)  
 IT 252011-02-2P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (black dye; production of polyazo reactive  
 dyes)  
 IT 252011-06-6P 252011-07-7P 252011-08-8P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (black dye; production of polyazo reactive  
 dyes for leather)  
 IT 252011-13-5P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (blue dye; production of polyazo reactive  
 dyes for leather)  
 IT 252011-15-7P 252011-16-8P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (coupling component; production of polyazo reactive  
 dyes)  
 IT 90-20-0 92-70-6, 3-Hydroxy-2-naphthalenecarboxylic acid  
 108-45-2, 1,3-Benzenediamine, reactions 108-46-3,  
 1,3-Benzenediol, reactions 119-18-6 2243-67-6,  
 2,6-Diaminonaphthalene 13269-73-3

- RL: RCT (Reactant); RACT (Reactant or reagent)  
(coupling component; production of polyazo reactive dyes)
- IT 252011-09-9P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(dark green dye; production of polyazo reactive dyes for leather)
- IT 2494-88-4, 3-(2-Sulfatoethylsulfonyl)aniline 2494-89-5, p-(2-Sulfatoethylsulfonyl)aniline 5246-58-2, p-(2-Hydroxyethylsulfonyl)aniline  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(diazo component; production of polyazo reactive dyes)
- IT 252011-03-3P 252011-04-4P 252011-05-5P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(dye; production of polyazo reactive dyes)
- IT 252011-10-2P 252011-11-3P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(green dye; production of polyazo reactive dyes for leather)
- IT 252011-12-4P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(navy blue dye; production of polyazo reactive dyes for leather)
- IT 252011-14-6P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(red coupling component; production of polyazo reactive dyes)
- IT 109-01-3, N-Methylpiperazine 110-85-0, Piperazine, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material; production of polyazo reactive dyes)
- IT 119-70-0 106003-92-3, 4,4'-Diaminodiphenylsulfamide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(tetrazo component; production of polyazo reactive dyes)

L31 ANSWER 12 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 1999:659462 HCAPLUS Full-text  
DOCUMENT NUMBER: 131:287742  
TITLE: Reactive dyes and their use  
INVENTOR(S): Brock, Earl David; Lewis, David Malcolm; Yousaf, Taher Iqbal  
PATENT ASSIGNEE(S): The Procter & Gamble Company, USA  
SOURCE: PCT Int. Appl., 82 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

| PATENT NO. | KIND  | DATE  | APPLICATION NO. | DATE  |
|------------|-------|-------|-----------------|-------|
| -----      | ----- | ----- | -----           | ----- |

## 11/628659

WO 9951684 A1 19991014 WO 1998-US6559 19980402 <--  
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,  
DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG,  
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,  
NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,  
UA, UG, US, UZ, VN, YU, ZW  
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,  
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CM, GA, GN, ML, MR, NE, SN, TD, TG  
AU 9868806 A 19991025 AU 1998-68806 19980402 <--  
WO 9951685 A1 19991014 WO 1999-US7293 19990401 <--  
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,  
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MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,  
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AU 9934664 A 19991025 AU 1999-34664 19990401 <--  
EP 1066345 A1 20010110 EP 1999-916316 19990401 <--  
EP 1066345 B1 20030312  
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JP 2003522209 T 20030722 JP 2000-542401 19990401 <--  
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CN 1515630 A 20040728 CN 2002-2002157154 19990401 <--  
CN 1269911 C 20060816  
MX 2000009670 A 20010405 MX 2000-9670 20001002 <--  
US 6518407 B1 20030211 US 2001-647580 20010213 <--  
AU 2003200055 A1 20030410 AU 2003-200055 20030109 <--  
PRIORITY APPLN. INFO.: WO 1998-US6559 A 19980402 <--  
AU 1999-34665 A3 19990401 <--  
WO 1999-US7293 W 19990401 <--

OTHER SOURCE(S): MARPAT 131:287742

AB ~~Reactive dyes~~ are disclosed comprising: (a) at least one chromophore moiety,  
(b) at least one nitrogen-containing heterocycle, (c) a linking group to link  
each chromophore moiety to each nitrogen-containing heterocycle; characterized  
in that at least one nitrogen-containing heterocycle is substituted with at  
least one thio derivative and at least one quaternized nitrogen derivative  
The ~~reactive dyes~~ have high exhaustion and fixation Values, particularly on  
cellulosic substrates such as cotton, and show significant improvements in  
terms of reducing spent dyes in effluent, increasing dye affinity to the  
substrate, increasing the dye-substrate covalent bonding, increasing the  
ability to dye substrates at room temperature, decreasing the amount of dye  
that is removed during the post ~~dyeing~~ "soaping off process" and therefore  
simplifying the post ~~dyeing~~ "soaping off process" traditionally associated  
with ~~dyeing~~ cotton with fiber ~~reactive dyes~~, and reduction of staining of  
adjacent white fabrics. In addition, the prepared dyes provide more intense  
~~dyeing~~ and require less levels of salt for ~~dyeing~~ cotton substrates. In an  
example, Procion Red MX-8B is treated with mercaptoacetic acid and then  
isonicotinic acid to give a dye.

IT 55-22-1DP, Isonicotinic acid, reaction products with  
halogen-containing dyes and thiols 59-67-6DP, Nicotinic acid,  
reaction products with halogen-containing dyes and thiols 108-77-0DP  
, Cyanuric chloride, reaction products with sulfatoethylsulfonylaniline,  
halogen-containing dyes, thiols and amines 280-57-9DP, DABCO,  
reaction products with halogen-containing dyes and thiols 1118-68-9DP

## 11/628659

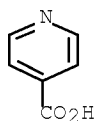
, Dimethylaminoacetic acid, reaction products with halogen-containing dyes and thiols 2494-89-5DP, 4-(2-Sulfatoethylsulfonyl)aniline, reaction products with cyanuric chloride, halogen-containing dyes, thiols and amines 57583-69-4DP, Procion Red MX 8B, reaction products with thiols and amines 246255-73-2P 246255-74-3P 246255-76-5P 246255-78-7DP, reaction products with halogen-containing dyes and amines

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(dye; production of nitrogen heterocycle reactive dyes containing thio and quaternary ammonium groups)

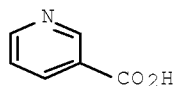
RN 55-22-1 HCAPLUS

CN 4-Pyridinecarboxylic acid (CA INDEX NAME)



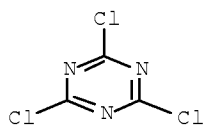
RN 59-67-6 HCAPLUS

CN 3-Pyridinecarboxylic acid (CA INDEX NAME)



RN 108-77-0 HCAPLUS

CN 1,3,5-Triazine, 2,4,6-trichloro- (CA INDEX NAME)



RN 280-57-9 HCAPLUS

CN 1,4-Diazabicyclo[2.2.2]octane (CA INDEX NAME)



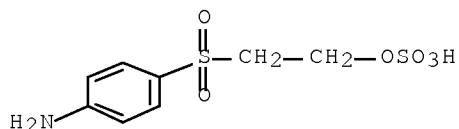
RN 1118-68-9 HCAPLUS

CN Glycine, N,N-dimethyl- (CA INDEX NAME)



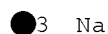
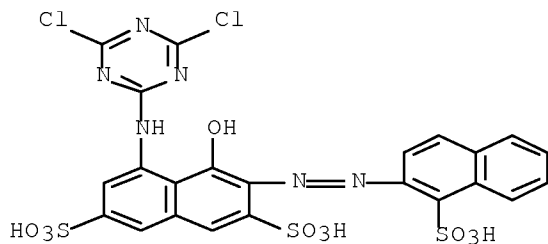
RN 2494-89-5 HCAPLUS

CN Ethanol, 2-[(4-aminophenyl)sulfonyl]-, 1-(hydrogen sulfate) (CA INDEX NAME)



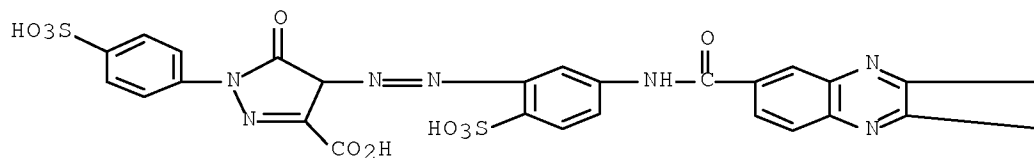
RN 57583-69-4 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 5-[(4,6-dichloro-1,3,5-triazin-2-yl)amino]-4-hydroxy-3-[2-(1-sulfo-2-naphthalenyl)diazenyl]-, sodium salt (1:3) (CA INDEX NAME)

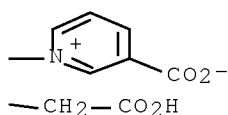


RN 246255-73-2 HCAPLUS

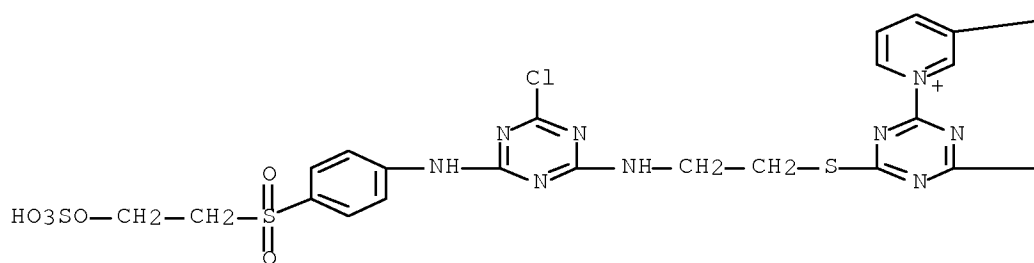
CN Pyridinium, 3-carboxy-1-[7-[[[3-[2-[3-carboxy-4,5-dihydro-5-oxo-1-(4-sulfo-phenyl)-1H-pyrazol-4-yl]diazenyl]-4-sulfo-phenyl]amino]carbonyl]-3-(carboxymethyl)-2-quinoxaliny]]-, inner salt, sodium salt (1:3) (CA INDEX NAME)



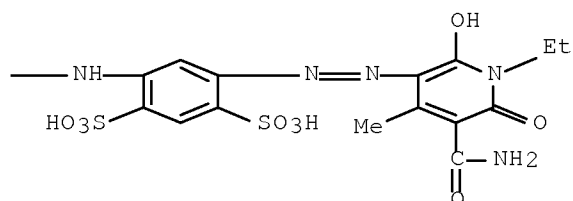
●3 Na



RN 246255-74-3 HCAPLUS  
 CN Pyridinium, 1-[4-[[5-[2-[5-(aminocarbonyl)-1-ethyl-1,6-dihydro-2-hydroxy-4-methyl-6-oxo-3-pyridinyl]diazenyl]-2,4-disulfophenyl]amino]-6-[[2-[[4-chloro-6-[[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]ethyl]thio]-1,3,5-triazin-2-yl]-3-carboxy-, inner salt, sodium salt (1:2) (CA INDEX NAME)

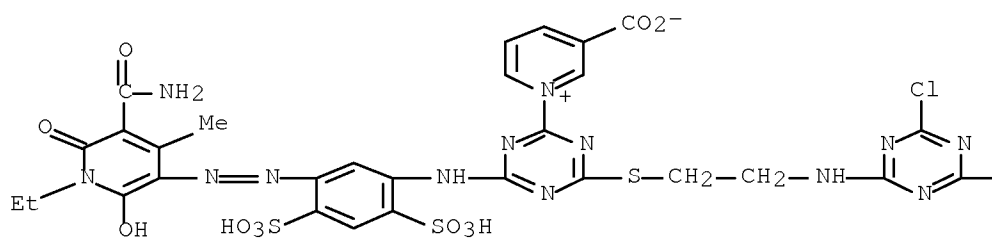


●2 Na

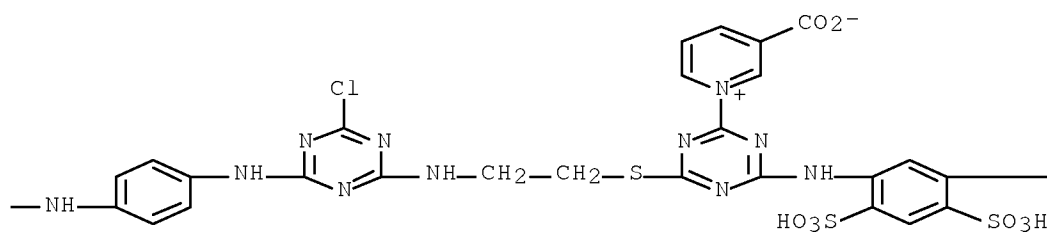
—CO<sub>2</sub><sup>-</sup>

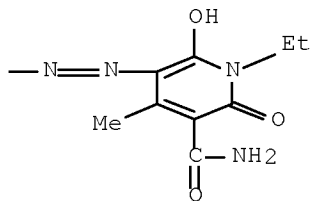
RN 246255-76-5 HCAPLUS

CN Pyridinium, 1,1'-[1,4-phenylenebis[imino(6-chloro-1,3,5-triazine-4,2-diyl)imino-2,1-ethanediylthio[6-[[5-[[5-(aminocarbonyl)-1-ethyl-1,6-dihydro-2-hydroxy-4-methyl-6-oxo-3-pyridinyl]azo]-2,4-disulfophenyl]amino]-1,3,5-triazine-4,2-diyl]]]bis[3-carboxy-, bis(inner salt), tetrasodium salt (9CI) (CA INDEX NAME)



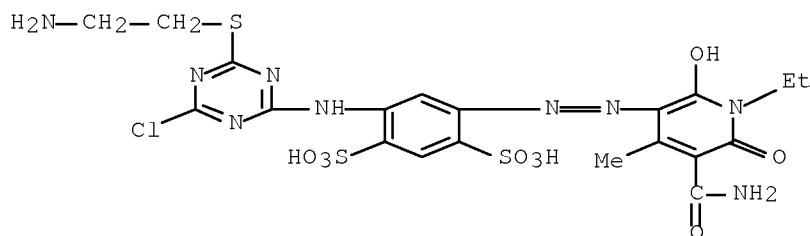
● 4 Na





RN 246255-78-7 HCAPLUS

CN 1,3-Benzenedisulfonic acid, 4-[2-[5-(aminocarbonyl)-1-ethyl-1,6-dihydro-2-hydroxy-4-methyl-6-oxo-3-pyridinyl]diazenyl]-6-[[4-[(2-aminoethyl)thio]-6-chloro-1,3,5-triazin-2-yl]amino]-, sodium salt (1:2) (CA INDEX NAME)

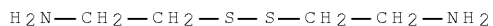


●2 Na

IT 51-85-4, Cystamine 59-67-6, Nicotinic acid, reactions  
 106-50-3, 1,4-Benzenediamine, reactions 108-77-0,  
 Cyanuric chloride 2494-89-5, 4-(2-Sulfatoethylsulfonyl)aniline  
 70865-29-1, Procion Yellow MX 8G 204995-91-5, Levafix  
 Golden Yellow E-G  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (starting material; production of nitrogen heterocycle reactive  
 dyes containing thio and quaternary ammonium groups)

RN 51-85-4 HCAPLUS

CN Ethanamine, 2,2'-dithiobis- (CA INDEX NAME)

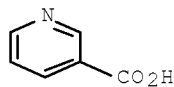


RN 59-67-6 HCAPLUS

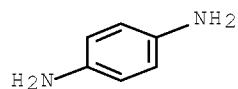
CN 3-Pyridinecarboxylic acid (CA INDEX NAME)



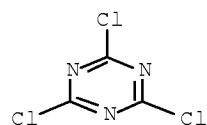
11/628659



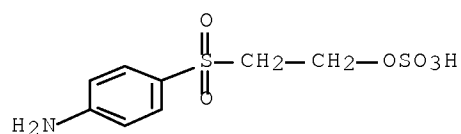
RN 106-50-3 HCAPLUS  
CN 1,4-Benzenediamine (CA INDEX NAME)



RN 108-77-0 HCAPLUS  
CN 1,3,5-Triazine, 2,4,6-trichloro- (CA INDEX NAME)

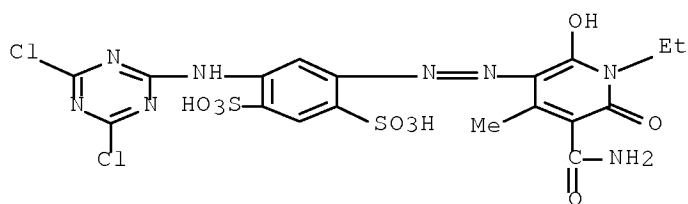


RN 2494-89-5 HCAPLUS  
CN Ethanol, 2-[(4-aminophenyl)sulfonyl]-, 1-(hydrogen sulfate) (CA INDEX NAME)



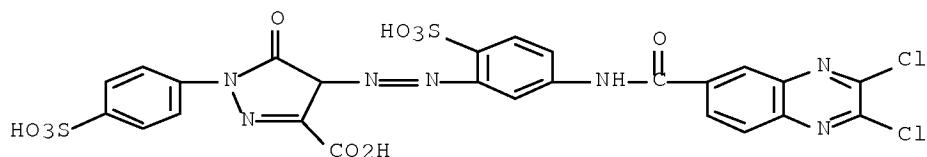
RN 70865-29-1 HCAPLUS  
CN 1,3-Benzenedisulfonic acid, 4-[2-[5-(aminocarbonyl)-1-ethyl-1,6-dihydro-2-hydroxy-4-methyl-6-oxo-3-pyridinyl]diazenyl]-6-[(4,6-dichloro-1,3,5-triazin-2-yl)amino]-, sodium salt (1:2) (CA INDEX NAME)

11/628659



●2 Na

RN 204995-91-5 HCAPLUS  
 CN 1H-Pyrazole-3-carboxylic acid, 4-[2-[5-[[2,3-dichloro-6-quinoxalinyldiazenyl]amino]-2-sulfo-phenyl]diazenyl]-4,5-dihydro-5-oxo-1-(4-sulfo-phenyl)-, sodium salt (1:3) (CA INDEX NAME)



●3 Na

IC ICM C09B062-02  
 ICS C09B062-503  
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
 Section cross-reference(s): 40, 45, 62  
 ST reactive dye nitrogen heterocycle deriv prodn;  
 quaternary ammonium reactive dye deriv prodn; thio  
 deriv reactive dye prodn; cotton dye nitrogen  
 heterocyclic compd  
 IT Textiles  
 (cotton; reactive dyeing with prepared nitrogen  
 heterocycle reactive dyes containing thio and  
 quaternary ammonium groups)  
 IT Reactive azo dyes  
 Reactive dyes  
 (production of nitrogen heterocycle reactive dyes  
 containing thio and quaternary ammonium groups)  
 IT Leather  
 (reactive dyeing with prepared nitrogen heterocycle  
 reactive dyes containing thio and quaternary ammonium  
 groups)  
 IT Keratins  
 Polyamide fibers, processes  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (reactive dyeing with prepared nitrogen heterocycle  
 reactive dyes containing thio and quaternary ammonium  
 groups)

- IT Textiles  
(silk; reactive dyeing with prepared nitrogen heterocycle reactive dyes containing thio and quaternary ammonium groups)
- IT Reactive dyeing  
(with prepared nitrogen heterocycle reactive dyes containing thio and quaternary ammonium groups)
- IT Textiles  
(wool; reactive dyeing with prepared nitrogen heterocycle reactive dyes containing thio and quaternary ammonium groups)
- IT 77-92-9, uses 110-16-7, 2-Butenedioic acid (2Z)-, uses 110-17-8, 2-Butenedioic acid (2E)-, uses 6915-15-7, Malic acid  
RL: NUU (Other use, unclassified); USES (Uses)  
(buffers for dyeing with prepared nitrogen heterocycle reactive dyes containing thio and quaternary ammonium groups)
- IT 55-22-1DP, Isonicotinic acid, reaction products with halogen-containing dyes and thiols 59-67-6DP, Nicotinic acid, reaction products with halogen-containing dyes and thiols 60-24-2DP, Mercaptoethanol, reaction products with halogen-containing dyes and amines 68-11-1DP, Mercaptoacetic acid, reaction products with halogen-containing dyes and amines 70-49-5DP, Mercaptosuccinic acid, reaction products with halogen-containing dyes and amines 108-77-0DP, Cyanuric chloride, reaction products with sulfatoethylsulfonylaniline, halogen-containing dyes, thiols and amines 123-81-9DP, Ethylene glycol bis(thioglycolate), reaction products with halogen-containing dyes and amines 280-57-9DP, DABCO, reaction products with halogen-containing dyes and thiols 1118-68-9DP, Dimethylaminoacetic acid, reaction products with halogen-containing dyes and thiols 2494-89-5DP, 4-(2-Sulfatoethylsulfonyl)aniline, reaction products with cyanuric chloride, halogen-containing dyes, thiols and amines 57583-69-4DP, Procion Red MX 8B, reaction products with thiols and amines 71902-16-4DP, Drimarene Brilliant Red K 4BL, reaction products with thiols and amines 246220-94-0DP, Drimalan Red F-B, reaction products with thiols and amines 246255-73-2P 246255-74-3P 246255-76-5P 246255-78-7DP, reaction products with halogen-containing dyes and amines  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(dye; production of nitrogen heterocycle reactive dyes containing thio and quaternary ammonium groups)
- IT 51-85-4, Cystamine 59-67-6, Nicotinic acid, reactions 68-11-1, Thioglycolic acid, reactions 106-50-3, 1,4-Benzenediamine, reactions 108-77-0, Cyanuric chloride 2494-89-5, 4-(2-Sulfatoethylsulfonyl)aniline 70865-29-1, Procion Yellow MX 8G 204995-91-5, Levafix Golden Yellow E-G  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material; production of nitrogen heterocycle reactive dyes containing thio and quaternary ammonium groups)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 13 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1999:194151 HCAPLUS Full-text

DOCUMENT NUMBER: 130:253669

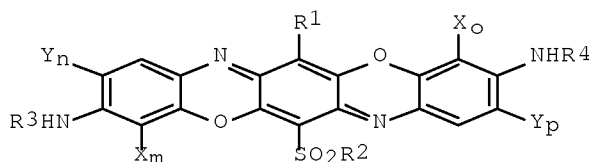
TITLE: Novel triphenodioxazine dyes, their precursors, their preparation and their use

INVENTOR(S): Kunde, Klaus

PATENT ASSIGNEE(S): Bayer A.-G., Germany

SOURCE: PCT Int. Appl., 32 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE           |
|---|------|----------|------------------|----------------|
| -----   | ---- | -----    | -----            | -----          |
| WO 9912937  | A2   | 19990318 | WO 1998-EP5528   | 19980901 <--   |
| WO 9912937  | A3   | 19990610 |                  |                |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW |      |          |                  |                |
| RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  |      |          |                  |                |
| DE 19739983   | A1   | 19990318 | DE 1997-19739983 | 19970911 <--   |
| AU 9894390  | A    | 19990329 | AU 1998-94390    | 19980901 <--   |
| PRIORITY APPLN. INFO.:  |      |          |                  |                |
|   |      |          | DE 1997-19739983 | A 19970911 <-- |
|   |      |          | WO 1998-EP5528   | W 19980901 <-- |
| OTHER SOURCE(S): MARPAT 130:253669  |      |          |                  |                |
| GI  |      |          |                  |                |



AB The triphenodioxazines (I; R1 = optionally substituted C1-4-alkyl or Ph; R2 = C1-4-alkyl, optionally substituted Ph; R3, R4 = H, Me, carboxy- or sulfomethyl, optionally substituted C2-4-alkyl; Xo, Xm, Yn, Yp = SO3H, CO2H, hydroxyethylsulfonyl, sulfatoethylsulfonyl; m, n, o, p = 0, 1; m + n = 1; o + p = 1) are obtained from dihydroxydiiminocyclohexadiene precursors which may be in turn obtained from hydroquinones or quinones and p-phenylenediamines or their precursors. These novel triphenodioxazines are used for dyeing and imprinting of cellulosic materials, natural and synthetic polyamides, and leather. In examples, I (R1 = R2 = Me; R3 = R4 = 2-aminoethyl; X = SO3H; m = o = 1; n = p = 0), I (R1 = R2 = Me; R3 = R4 = H; X = SO3H; m = o = 1; n = p = 0), and I (R1 = R2 = Me; R3 = R4 = 2-sulfatoethyl; X = 2-sulfatoethylsulfonyl; m = o = 1; n = p = 0) were obtained.

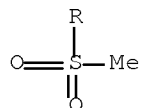
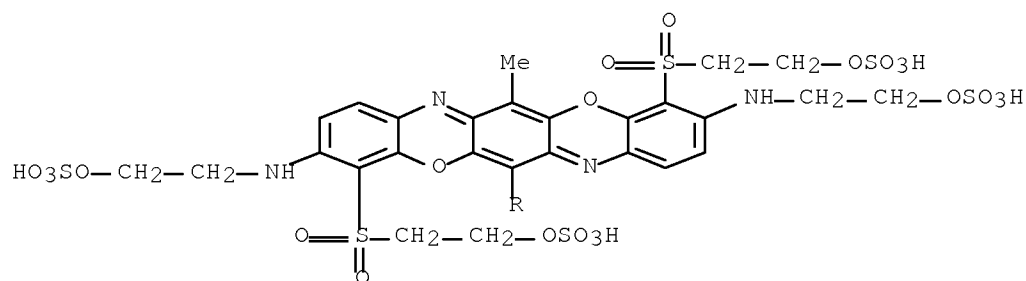
IT ~~221345-44-4P~~

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (blue dye; preparation of triphenodioxazine dyes for textiles and leather)

RN 221345-44-4 HCAPLUS

CN Ethanol, 2,2'-[[6-methyl-13-(methylsulfonyl)-3,10-bis[[2-(sulfooxy)ethyl]amino]-4,11-triphenodioxazinediyl]bis(sulfonyl)]bis-, bis(hydrogen sulfate) (ester) (9CI) (CA INDEX NAME)

11/628659

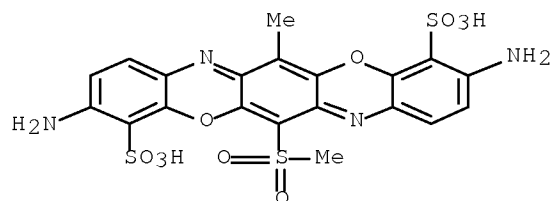


IT 221345-42-2F 221345-43-3P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(dye; preparation of triphenyloxazine dyes for textiles and leather)

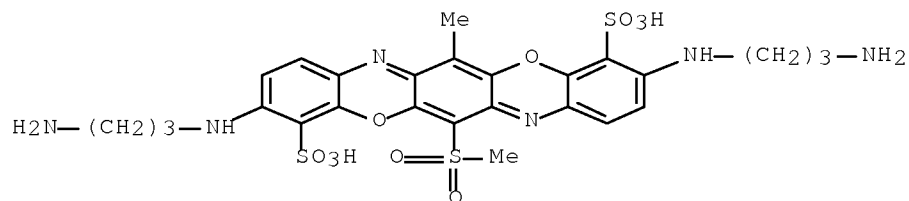
RN 221345-42-2 HCAPLUS

CN 4,11-Triphenyloxazinedisulfonic acid,  
3,10-diamino-6-methyl-13-(methylsulfonyl)- (CA INDEX NAME)



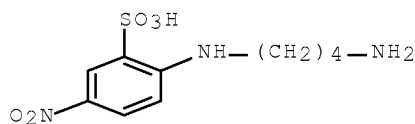
RN 221345-43-3 HCAPLUS

CN 4,11-Triphenyloxazinedisulfonic acid,  
3,10-bis[(3-aminopropyl)amino]-6-methyl-13-(methylsulfonyl)- (CA INDEX NAME)

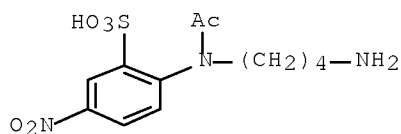


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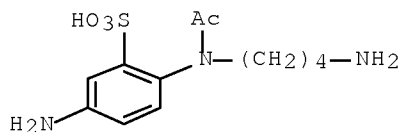
IT 221345-11-5P, 2-(4-Aminobutylamino)-5-nitrobenzenesulfonic acid  
 221345-13-7P, 2-[N-Acetyl-N-(4-Aminobutyl)amino]-5-nitrobenzenesulfonic acid 221345-15-9P,  
 2-[N-Acetyl-N-(4-Aminobutyl)amino]-5-aminobenzenesulfonic acid  
 221345-17-1P, 2-[N-Acetyl-N-(2-Aminoethyl)amino]-5-nitrobenzenesulfonic acid 221345-19-3P,  
 2-[N-Acetyl-N-(3-Aminopropyl)amino]-5-nitrobenzenesulfonic acid  
 221345-21-7P, 2-[N-Acetyl-N-(2-Aminoethyl)amino]-5-aminobenzenesulfonic acid 221345-23-9P,  
 2-[N-Acetyl-N-(3-Aminopropyl)amino]-5-aminobenzenesulfonic acid  
 221345-27-3P 221345-30-8P 221345-32-0P  
 221345-35-3P 221345-37-5P 221345-39-7P  
 221345-40-0P 221345-41-1P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; preparation of triphenodioxazine dyes for textiles and leather)  
 RN 221345-11-5 HCAPLUS  
 CN Benzenesulfonic acid, 2-[(4-aminobutyl)amino]-5-nitro- (CA INDEX NAME)



RN 221345-13-7 HCAPLUS  
 CN Benzenesulfonic acid, 2-[acetyl(4-aminobutyl)amino]-5-nitro- (CA INDEX NAME)

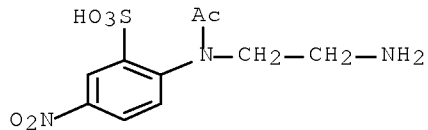


RN 221345-15-9 HCAPLUS  
 CN Benzenesulfonic acid, 2-[acetyl(4-aminobutyl)amino]-5-amino- (CA INDEX NAME)



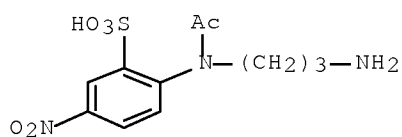
RN 221345-17-1 HCAPLUS  
 CN Benzenesulfonic acid, 2-[acetyl(2-aminoethyl)amino]-5-nitro- (CA INDEX NAME)

NAME)



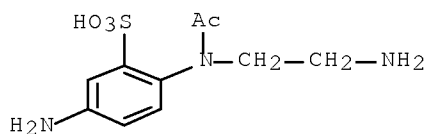
RN 221345-19-3 HCAPLUS

CN Benzenesulfonic acid, 2-[acetyl(3-aminopropyl)amino]-5-nitro- (CA INDEX NAME)



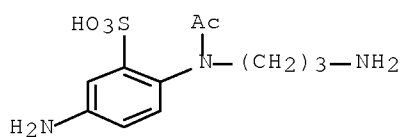
RN 221345-21-7 HCAPLUS

CN Benzenesulfonic acid, 2-[acetyl(2-aminoethyl)amino]-5-amino- (CA INDEX NAME)



RN 221345-23-9 HCAPLUS

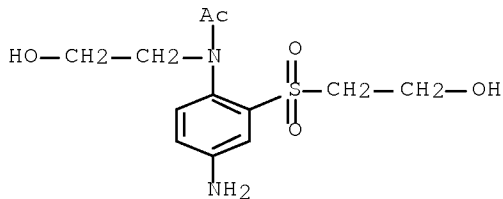
CN Benzenesulfonic acid, 2-[acetyl(3-aminopropyl)amino]-5-amino- (CA INDEX NAME)



RN 221345-27-3 HCAPLUS

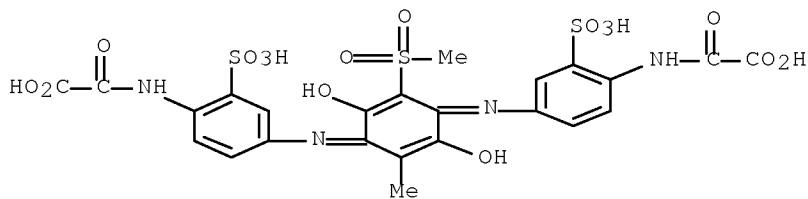
CN Acetamide, N-[4-amino-2-[(2-hydroxyethyl)sulfonyl]phenyl]-N-(2-hydroxyethyl)- (CA INDEX NAME)

11/628659



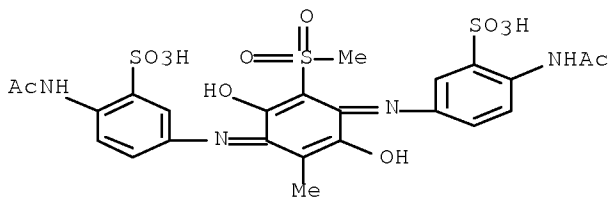
RN 221345-30-8 HCAPLUS

CN Acetic acid, 2,2'-[[2,5-dihydroxy-3-methyl-6-(methylsulfonyl)-2,5-cyclohexadiene-1,4-diylidene]bis[nitrilo(2-sulfo-4,1-phenylene)imino]]bis[2-oxo- (9CI) (CA INDEX NAME)



RN 221345-32-0 HCAPLUS

CN Benzenesulfonic acid, 3,3'-[[2,5-dihydroxy-3-methyl-6-(methylsulfonyl)-2,5-cyclohexadiene-1,4-diylidene]dinitrilo]bis[6-(acetylamino)- (9CI) (CA INDEX NAME)

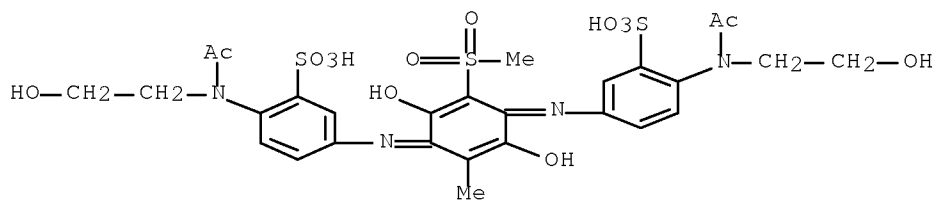


RN 221345-35-3 HCAPLUS

CN Benzenesulfonic acid, 3,3'-[[2,5-dihydroxy-3-methyl-6-(methylsulfonyl)-2,5-cyclohexadiene-1,4-diylidene]dinitrilo]bis[6-[acetyl(2-hydroxyethyl)amino]-(9CI) (CA INDEX NAME)

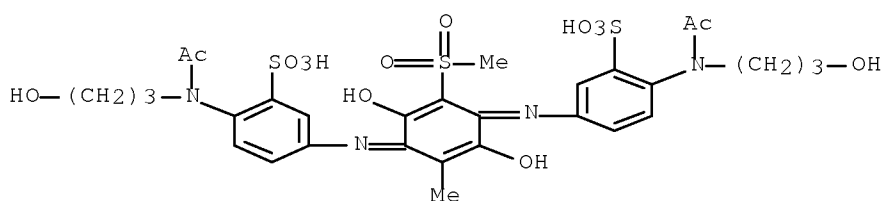


11/628659



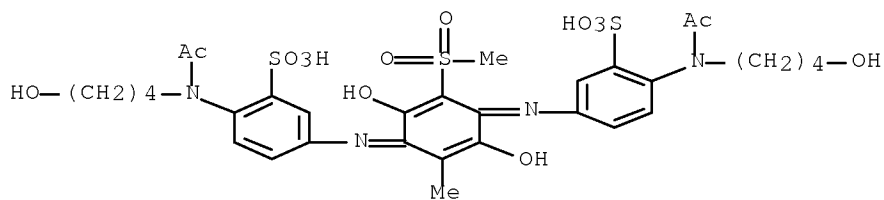
RN 221345-37-5 HCAPLUS

CN Benzenesulfonic acid, 3,3'-[[2,5-dihydroxy-3-methyl-6-(methylsulfonyl)-2,5-cyclohexadiene-1,4-diylidene]dinitrilo]bis[6-[acetyl(3-hydroxypropyl)amino]- (9CI) (CA INDEX NAME)



RN 221345-39-7 HCAPLUS

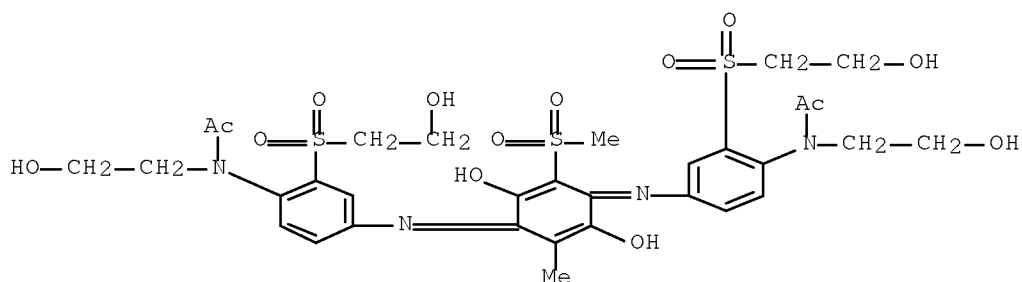
CN Benzenesulfonic acid, 3,3'-[[2,5-dihydroxy-3-methyl-6-(methylsulfonyl)-2,5-cyclohexadiene-1,4-diylidene]dinitrilo]bis[6-[acetyl(4-hydroxybutyl)amino]- (9CI) (CA INDEX NAME)



RN 221345-40-0 HCAPLUS

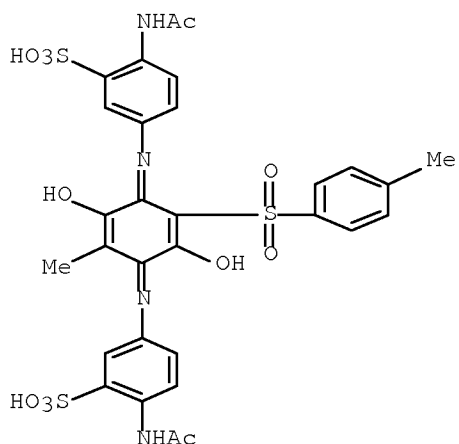
CN Acetamide, N-[4-[[4-[[4-[acetyl(2-hydroxyethyl)amino]-3-[(2-hydroxyethyl)sulfonyl]phenyl]imino]-2,5-dihydroxy-3-methyl-6-(methylsulfonyl)-2,5-cyclohexadien-1-ylidene]amino]-2-[(2-hydroxyethyl)sulfonyl]phenyl]-N-(2-hydroxyethyl)- (9CI) (CA INDEX NAME)

11/628659



RN 221345-41-1 HCAPLUS

CN Benzenesulfonic acid, 3,3'-[[2,5-dihydroxy-3-methyl-6-[(4-methylphenyl)sulfonyl]-2,5-cyclohexadiene-1,4-diylidene]dinitrilo]bis[6-(acetamino)- (9CI) (CA INDEX NAME)

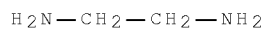


IT 107-15-3, Ethylenediamine, reactions 109-76-2,  
1,3-Diaminopropane 110-60-1, 1,4-Diaminobutane 946-30-5  
, Sodium 2-chloro-5-nitrobenzenesulfonate 6364-15-4  
6973-05-3, 2-Acetamido-5-aminobenzenesulfonic acid  
221345-25-1

RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material; preparation of triphenodioxazine dyes for textiles and  
leather)

RN 107-15-3 HCAPLUS

CN 1,2-Ethanediamine (CA INDEX NAME)

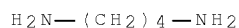


RN 109-76-2 HCAPLUS

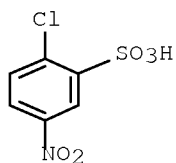
CN 1,3-Propanediamine (CA INDEX NAME)



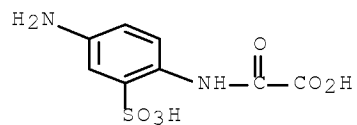
RN 110-60-1 HCAPLUS  
CN 1,4-Butanediamine (CA INDEX NAME)



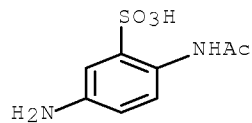
RN 946-30-5 HCAPLUS  
CN Benzenesulfonic acid, 2-chloro-5-nitro-, sodium salt (1:1) (CA INDEX NAME)



RN 6364-15-4 HCAPLUS  
CN Acetic acid, 2-[(4-amino-2-sulfophenyl)amino]-2-oxo- (CA INDEX NAME)

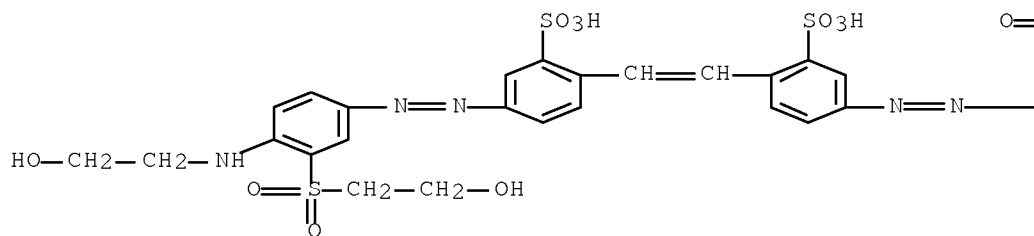


RN 6973-05-3 HCAPLUS  
CN Benzenesulfonic acid, 2-(acetylamino)-5-amino- (CA INDEX NAME)

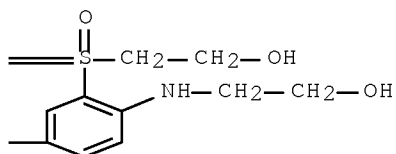


RN 221345-25-1 HCAPLUS  
CN Benzenesulfonic acid, 2,2'-(1,2-ethenediyl)bis[5-[[4-[(2-hydroxyethyl)amino]-3-[(2-hydroxyethyl)sulfonyl]phenyl]azo]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM C07D498-00  
 CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
 Section cross-reference(s): 40, 45  
 ST triphenyldioxazine dye prepn textile leather application  
 IT Reactive dyeing  
 (of cotton textiles with prepared triphenyldioxazine dyes)  
 IT Dyeing  
 (of leather and textiles with prepared triphenyldioxazine dyes)  
 IT leather  
 (preparation of triphenyldioxazine dyes for)  
 IT Dyes  
 (preparation of triphenyldioxazine dyes for textiles and leather)  
 IT Reactive dyes  
 (vinyl sulfone; preparation of triphenyldioxazine dyes for textiles and leather)  
 IT 221345-44-4P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (blue dye; preparation of triphenyldioxazine dyes for textiles and leather)  
 IT 221345-42-2P 221345-43-3P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (dye; preparation of triphenyldioxazine dyes for textiles and leather)  
 IT 221345-07-9P, 2-Methyl-5-(methylsulfonyl)hydroquinone 221345-09-1P,  
 2-Methyl-5-(4-methylphenylsulfonyl)hydroquinone 221345-11-5P,  
 2-(4-Aminobutylamino)-5-nitrobenzenesulfonic acid 221345-13-7P,  
 2-[N-Acetyl-N-(4-Aminobutyl)amino]-5-nitrobenzenesulfonic acid  
 221345-15-9P, 2-[N-Acetyl-N-(4-Aminobutyl)amino]-5-aminobenzenesulfonic acid 221345-17-1P,

2-[N-Acetyl-N-(2-Aminoethyl)amino]-5-nitrobenzenesulfonic acid  
~~221345-19-3P~~, 2-[N-Acetyl-N-(3-Aminopropyl)amino]-5-  
 nitrobenzenesulfonic acid ~~221345-21-7P~~,  
 2-[N-Acetyl-N-(2-Aminoethyl)amino]-5-aminobenzenesulfonic acid  
~~221345-23-9P~~, 2-[N-Acetyl-N-(3-Aminopropyl)amino]-5-  
 aminobenzenesulfonic acid ~~221345-27-3P~~ ~~221345-30-8P~~  
~~221345-32-0P~~ ~~221345-35-3P~~ ~~221345-37-5P~~  
~~221345-39-7P~~ ~~221345-40-0P~~ ~~221345-41-1P~~

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)

(intermediate; preparation of triphenodioxazine dyes for textiles and  
 leather)

IT 64-19-7, Acetic acid, reactions 95-71-6, Methylhydroquinone  
 107-15-3, Ethylenediamine, reactions 109-76-2,  
 1,3-Diaminopropane 110-60-1, 1,4-Diaminobutane 824-79-3,  
 Sodium p-toluenesulfinate 946-30-5, Sodium  
 2-chloro-5-nitrobenzenesulfonate ~~6364-15-4~~ ~~6973-05-3~~,  
 2-Acetamido-5-aminobenzenesulfonic acid 20277-69-4, Sodium  
 methylsulfinate ~~221345-25-1~~

RL: RCT (Reactant); RACT (Reactant or reagent)

(starting material; preparation of triphenodioxazine dyes for textiles and  
 leather)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 14 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1998:175784 HCAPLUS Full-text

DOCUMENT NUMBER: 128:193734

ORIGINAL REFERENCE NO.: 128:38265a,38268a

TITLE: Mixtures of dyes and their use

INVENTOR(S): Adam, Jean-Marie; Hurter, Rudolf

PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.

SOURCE: Eur. Pat. Appl., 30 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|--|------|----------|-----------------|--------------|
| -----  | ---- | -----    | -----           | -----        |
| EP 826743  | A2   | 19980304 | EP 1997-810580  | 19970819 <-- |
| EP 826743  | A3   | 19981209 |                 |              |
| EP 826743  | B1   | 20020918 |                 |              |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,<br>IE, SI, LT, LV, FI, RO |      |          |                 |              |
| JP 10088021  | A    | 19980407 | JP 1997-221395  | 19970818 <-- |
| JP 4056593   | B2   | 20080305 |                 |              |

PRIORITY APPLN. INFO.: CH 1996-2087 A 19960826 <--

OTHER SOURCE(S): MARPAT 128:193734

AB Dye mixts. for printing and dyeing of fibrous materials contain at least one  
 dye having triazinediamino groups and at least one of another dye having  
 either triazinediamino groups or amide linkages. Level dyeings on polyamide  
 with good fastness are obtained with these reactive dye mixts. In a typical  
 dye preparation, 1,3-phenylenediamine-4-sulfonic acid was condensed (1:1) with  
 cyanuric chloride and the product was diazotized and coupled with 2-  
 naphthylamine-5-sulfonic acid; condensation of the resulting azo dye with  
 PhNH<sub>2</sub> gave a reactive chlorotriazine dye. Dyeing of polyamide, wool, and  
 leather is exemplified.

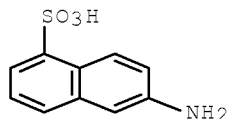
IT 81-05-0, 2-Naphthylamine-5-sulfonic acid

11/628659

RL: RCT (Reactant); RACT (Reactant or reagent)  
(coupling component; preparation of reactive dyes for  
dyeing mixts. for polyamide)

RN 81-05-0 HCAPLUS

CN 1-Naphthalenesulfonic acid, 6-amino- (CA INDEX NAME)



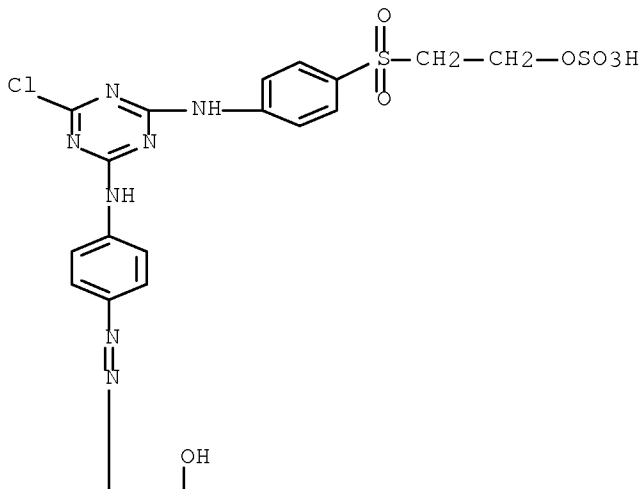
IT 168544-29-4P 178493-40-8P 195306-72-0P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(dye; preparation of reactive dyes for  
dyeing mixts. for polyamide)

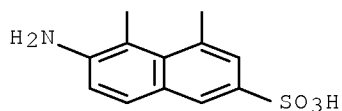
RN 168544-29-4 HCAPLUS

CN 2-Naphthalenesulfonic acid, 6-amino-5-[2-[4-[[4-chloro-6-[[4-[[2-  
(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-  
yl]amino]phenyl]diazenyl]-4-hydroxy- (CA INDEX NAME)

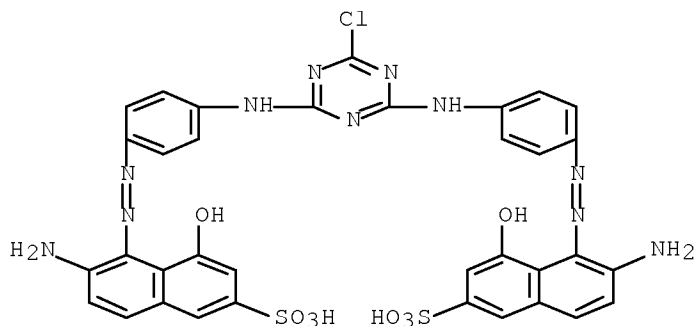
PAGE 1-A



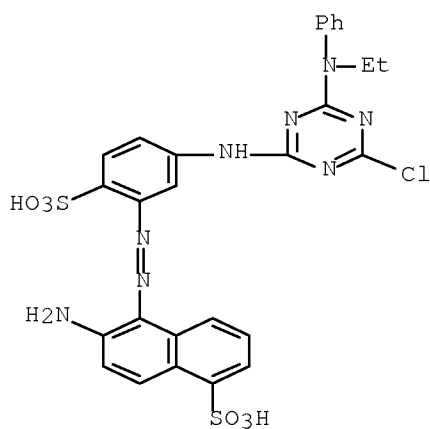
PAGE 2-A



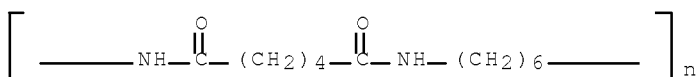
RN 178493-40-8 HCAPLUS  
 CN 2-Naphthalenesulfonic acid, 5,5'-[(6-chloro-1,3,5-triazine-2,4-diyl)bis(imino-4,1-phenyleneazo)]bis[6-amino-4-hydroxy- (9CI) (CA INDEX NAME)



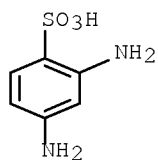
RN 195306-72-0 HCAPLUS  
 CN 1-Naphthalenesulfonic acid, 6-amino-5-[2-[5-[4-chloro-6-(ethylphenylamino)-1,3,5-triazin-2-yl]amino]-2-sulfohenyl]diazenyl]- (CA INDEX NAME)



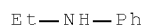
IT 32131-17-2, Nylon 66, processes  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (fabrics; dyeing and printing with prepared reactive dye mixts.)  
 RN 32131-17-2 HCAPLUS  
 CN Poly[imino(1,6-dioxo-1,6-hexanediyl)imino-1,6-hexanediyl] (CA INDEX NAME)



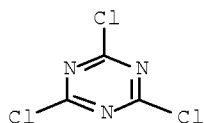
IT 88-63-1, 1,3-Phenylenediamine-4-sulfonic acid 103-69-5,  
 N-Ethylaniline 108-77-0, Cyanuric chloride 2494-89-5,  
 4-( $\beta$ -Sulfatoethylsulfonyl)aniline 59836-94-1,  
 6-Amino-5-(4-aminophenylazo)-4-hydroxy-2-naphthalenesulfonic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (starting material; preparation of reactive dyes for  
 dyeing mixts. for polyamide)  
 RN 88-63-1 HCAPLUS  
 CN Benzenesulfonic acid, 2,4-diamino- (CA INDEX NAME)



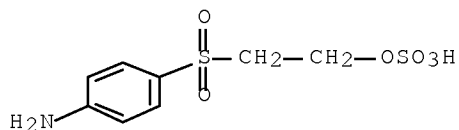
RN 103-69-5 HCAPLUS  
 CN Benzenamine, N-ethyl- (CA INDEX NAME)



RN 108-77-0 HCAPLUS  
 CN 1,3,5-Triazine, 2,4,6-trichloro- (CA INDEX NAME)



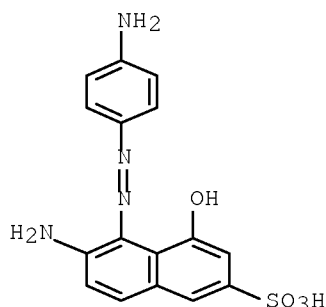
RN 2494-89-5 HCAPLUS  
 CN Ethanol, 2-[(4-aminophenyl)sulfonyl]-, 1-(hydrogen sulfate) (CA INDEX NAME)



RN 59836-94-1 HCAPLUS



CN 2-Naphthalenesulfonic acid, 6-amino-5-[2-(4-aminophenyl)diazenyl]-4-hydroxy- (CA INDEX NAME)



IC ICM C09B067-22  
ICS D06P003-10; C09B062-04

CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
Section cross-reference(s): 40, 45

ST reactive dye mixt polyamide dyeing printing;  
azo reactive dye prepn

IT Leather  
(dyeing and printing with prepared reactive dye mixts.)

IT Polyamides, processes  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(fabrics; dyeing and printing with prepared reactive dye mixts.)

IT Polyamide fibers, uses  
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(fabrics; dyeing and printing with prepared reactive dye mixts.)

IT Reactive dyeing  
(of polyamide, wool and leather with prepared reactive dye mixts.)

IT Reactive azo dyes  
Reactive dyes  
(preparation of reactive dyes for dyeing mixts. for polyamide)

IT Textile printing  
(reactive; of polyamide, wool and leather with prepared reactive dye mixts.)

IT Textiles  
(wool; dyeing and printing with prepared reactive dye mixts.)

IT 81-05-0, 2-Naphthylamine-5-sulfonic acid  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(coupling component; preparation of reactive dyes for dyeing mixts. for polyamide)

IT 168544-29-4P 178493-40-8P 195306-72-0P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(dye; preparation of reactive dyes for dyeing mixts. for polyamide)

IT 32131-17-2, Nylon 66, processes  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (fabrics; dyeing and printing with prepared reactive  
 dye mixts.)

IT 88-63-1, 1,3-Phenylenediamine-4-sulfonic acid 103-69-5,  
 N-Ethylaniline 108-77-0, Cyanuric chloride 2494-89-5,  
 4-( $\beta$ -Sulfatoethylsulfonyl)aniline 59836-94-1,  
 6-Amino-5-(4-aminophenylazo)-4-hydroxy-2-naphthalenesulfonic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (starting material; preparation of reactive dyes for  
 dyeing mixts. for polyamide)

L31 ANSWER 15 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 1996:339272 HCAPLUS Full-text  
 DOCUMENT NUMBER: 125:36240  
 ORIGINAL REFERENCE NO.: 125:7028h, 7029a  
 TITLE: The use of chitosan in the dyeing of full  
 chrome leather with reactive  
 dyes  
 AUTHOR(S): Burkinshaw, S. M.; Jarvis, A. N.  
 CORPORATE SOURCE: Specialty Chem. Group, The University, Leeds, LS2 9JT,  
 UK  
 SOURCE: Dyes and Pigments (1996), 31(1), 35-52  
 CODEN: DYPIDX; ISSN: 0143-7208  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

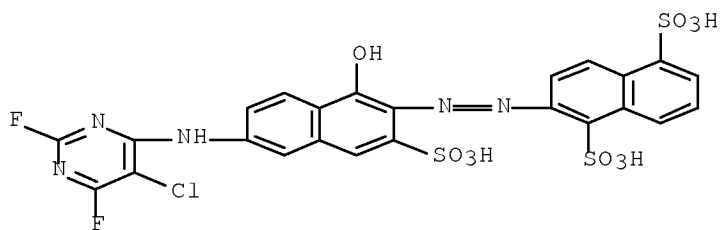
AB Treatment of chrome grain leather with two grades of chitosan enhanced the  
 depth of shade obtained using three difluorochloropyrimidine and three  $\beta$ -  
 sulphatoethylsulfone reactive dyes. The pretreated leather was of deeper or  
 similar hue to that of dyed untreated leather and the wash fastness of the  
 pretreated dyed leather was comparable. The greater color strength of the  
 dyed, pretreated leather was attributed to increased dye-leather  
 substantivity arising from the presence of the cationic polymer at the surface  
 of the leather. Application of an unreactive, hydrolyzed version of one of  
 the dyes to the chitosan-treated leather revealed that the pretreatment also  
 imparted addnl. nucleophilic groups that were available for covalent  
 attachment of the reactive dyes.

IT 72828-73-0, C.I. Reactive Orange 64  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC  
 (Process); RACT (Reactant or reagent)  
 (Drimarene Brilliant Orange K 3R; in dyeing of  
 chitosan-pretreated leather)

RN 72828-73-0 HCAPLUS

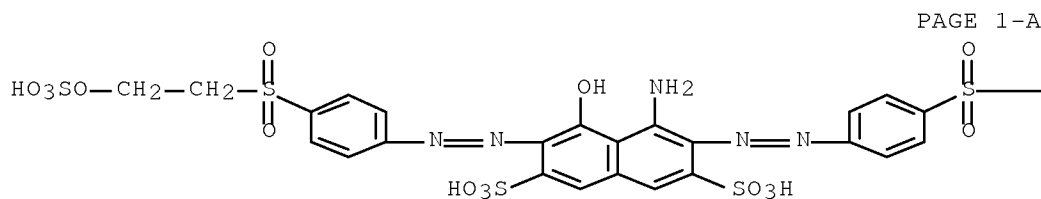
CN 1,5-Naphthalenedisulfonic acid, 2-[2-[6-[(5-chloro-2,6-difluoro-4-  
 pyrimidinyl)amino]-1-hydroxy-3-sulfo-2-naphthalenyl]diazenyl]-, sodium  
 salt (1:3) (CA INDEX NAME)

11/628659



●3 Na

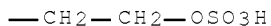
IT 17095-24-8, C.I. Reactive Black 5  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (Remazol Black B; in dyeing of chitosan-pretreated leather)  
 RN 17095-24-8 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3,6-bis[2-[4-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]diazenyl]-, sodium salt (1:4) (CA INDEX NAME)



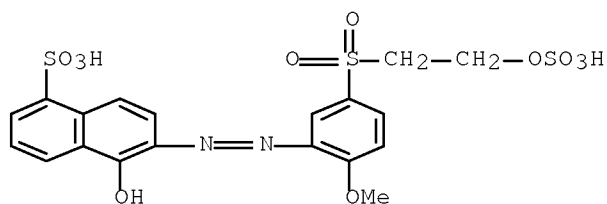
●4 Na

PAGE 1-A

PAGE 1-B

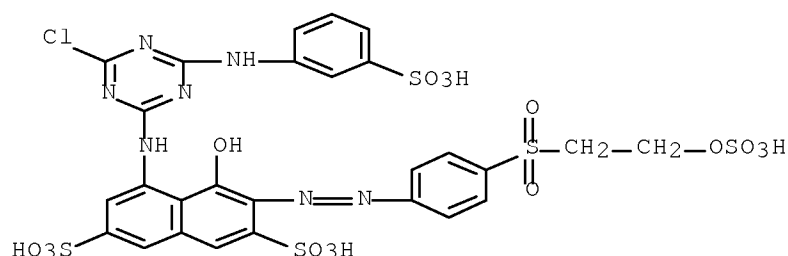


IT 19526-81-9  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (Remazol Red RB; in dyeing of chitosan-pretreated leather)  
 RN 19526-81-9 HCAPLUS  
 CN 1-Naphthalenesulfonic acid, 5-hydroxy-6-[2-[2-methoxy-5-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]diazenyl]-, sodium salt (1:2) (CA INDEX NAME)



●2 Na

IT 145017-98-7, C.I. Reactive Red 198  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (in dyeing of chitosan-pretreated leather)  
 RN 145017-98-7 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid, 5-[[4-chloro-6-[(3-sulfophenyl)amino]-1,3,5-triazin-2-yl]amino]-4-hydroxy-3-[2-[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-, sodium salt (1:4) (CA INDEX NAME)



●4 Na

CC 45-2 (Industrial Organic Chemicals, Leather, Fats, and Waxes)  
 Section cross-reference(s): 44  
 ST dyeing chitosan pretreated leather  
 IT leather  
 (dyeing of chitosan-pretreated leather with reactive dyes)  
 IT Dyeing  
 (of chitosan-pretreated leather with reactive dyes)  
 IT 61969-09-3, C.I. Reactive Green 21  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (Drimarene Brilliant Green K 5BL; in dyeing of chitosan-pretreated leather)  
 IT 72828-73-0, C.I. Reactive Orange 64  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (Drimarene Brilliant Orange K 3R; in dyeing of chitosan-pretreated leather)

IT 71902-16-4, C.I. ~~Reactive~~ Red 147  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC  
 (Process); RACT (Reactant or reagent)  
 (Drimarene Brilliant Red 4BL-CDG; in dyeing of  
 chitosan-pretreated leather)

IT 17095-24-8, C.I. ~~Reactive~~ Black 5  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC  
 (Process); RACT (Reactant or reagent)  
 (Remazol Black B; in dyeing of chitosan-pretreated  
 leather)

IT 19526-81-9  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC  
 (Process); RACT (Reactant or reagent)  
 (Remazol Red RB; in dyeing of chitosan-pretreated leather)

IT 9012-76-4, Chitosan  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC  
 (Process); RACT (Reactant or reagent)  
 (dyeing of chitosan-pretreated leather with  
 reactive dyes)

IT 145017-98-7, C.I. ~~Reactive~~ Red 198 177772-87-1,  
 Remazol Brilliant Blue FB  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC  
 (Process); RACT (Reactant or reagent)  
 (in dyeing of chitosan-pretreated leather)

L31 ANSWER 16 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1996:294756 HCAPLUS Full-text

DOCUMENT NUMBER: 124:319677

ORIGINAL REFERENCE NO.: 124:59241a,59244a

TITLE: Bifunctionally ~~reactive~~ monoazo dyes  
 , their preparation and use

INVENTOR(S): Lehr, Friedrich

PATENT ASSIGNEE(S): Sandoz Ltd., Switz.; Sandoz-Patent-Gmbh;  
 Sandoz-Erfindungen Verwaltungsgesellschaft MbH

SOURCE: PCT Int. Appl., 31 pp.

CODEN: PIXXD2

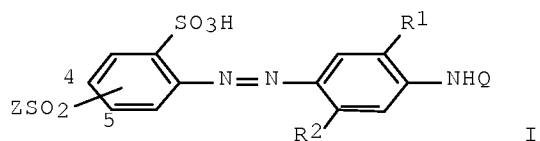
DOCUMENT TYPE: Patent

LANGUAGE: English

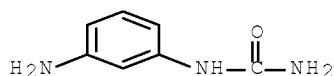
FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

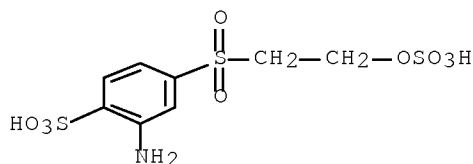
| PATENT NO.   | KIND | DATE                                   | APPLICATION NO. | DATE           |
|--|------|--|-----------------|----------------|
| WO 9602593   | A1   | 19960201                               | WO 1995-EP2779  | 19950714 <--   |
| W: BR, CN, JP, KR, MX, US  |      |  |                 |                |
| RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE |      |  |                 |                |
| DE 4425222   | A1   | 19960118                               | DE 1994-4425222 | 19940716 <--   |
| DE 4435380   | A1   | 19960411                               | DE 1994-4435380 | 19941004 <--   |
| EP 772652  | A1   | 19970514                               | EP 1995-926893  | 19950714 <--   |
| EP 772652  | B1   | 20010829                               |                 |                |
| R: CH, DE, ES, FR, GB, IT, LI, PT                                  |      |  |                 |                |
| BR 9508283   | A    | 19971223                               | BR 1995-8283    | 19950714 <--   |
| JP 10504330  | T    | 19980428                               | JP 1996-504698  | 19950714 <--   |
| JP 3829992   | B2   | 20061004                               |                 |                |
| US 5747657   | A    | 19980505                               | US 1997-765786  | 19970114 <--   |
| PRIORITY APPLN. INFO.:   |      |  | DE 1994-4425222 | A 19940716 <-- |
|  |      |  | DE 1994-4435380 | A 19941004 <-- |
|  |      |  | WO 1995-EP2779  | W 19950714 <-- |
| OTHER SOURCE(S):   |      | CASREACT 124:319677; MARPAT 124:319677 |                 |                |
| GI   |      |  |                 |                |



- AB The dyes have the formula I, where R1 signifies H, Me, OMe, or OEt, R2 signifies H, Me, NHCONH2 or NHAc, Q signifies 2,6-dichloro-5-cyano-4-pyrimidinyl, (5-chloro-)2,6-difluoro-4-pyrimidinyl, or 4-fluoro-6-morpholino-s-triazin-2-yl, Z signifies CH:CH2 or a precursor and the SO2Z group may be bonded in position 4 or 5. The I are useful in printing or dyeing HO- or N-containing organic substrates, especially cotton and leather. Thus, 3-HO3SOCH2CH2SO2C6H4NH2 was sulfonated, diazotized, and coupled with 3-H2NCONHC6H4NH2, and the product was condensed with 5-chloro-2,4,6-trifluoropyrimidine to give I (R1 = H, R2 = NHCONH2, Q = 5-chloro-2,6-difluoro-4-pyrimidinyl, Z = CH2CH2OSO3H, SO2Z in position 5),  $\lambda_{\max}$  378 nm in H2O, fast golden yellow on cotton.
- IT 25711-72-2, (m-Aminophenyl)urea  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (coupling component; preparation of bifunctionally reactive monoazo dyes for cotton and leather)
- RN 25711-72-2 HCAPLUS
- CN Urea, N-(3-aminophenyl)- (CA INDEX NAME)

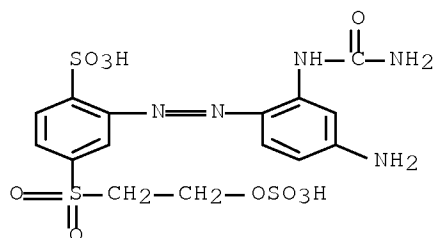


- IT 41261-80-7F, 2-Amino-4-( $\beta$ -sulfatoethylsulfonyl)benzenesulfonic acid 174491-68-0F  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; preparation of bifunctionally reactive monoazo dyes for cotton and leather)
- RN 41261-80-7 HCAPLUS
- CN Benzenesulfonic acid, 2-amino-4-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)



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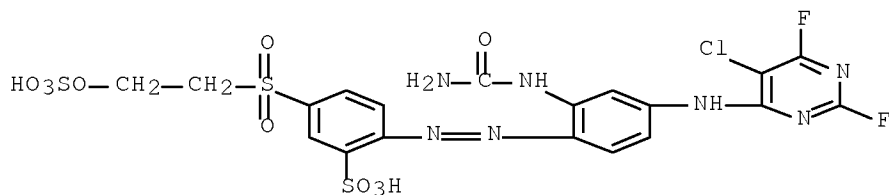
RN 174491-68-0 HCAPLUS  
 CN Benzenesulfonic acid, 2-[2-[4-amino-2-  
 [(aminocarbonyl)amino]phenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-  
 (CA INDEX NAME)



IT 176449-19-7P 176449-20-0P 176449-21-1P  
 176449-22-2P 176449-23-3P 176449-24-4P  
 176449-25-5P 176449-26-6P 176449-27-7P  
 176449-28-8P 176449-29-9P 176449-30-2P  
 176449-31-3P 176449-32-4P 176449-34-6P  
 176449-35-7P 176449-36-8P 176449-37-9P  
 176449-38-0P 176449-40-4P 176449-41-5P  
 176449-42-6P 176449-43-7P 176449-44-8P  
 176449-45-9P 176449-46-0P 176449-47-1P  
 176449-48-2P 177347-90-9P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (preparation of bifunctionally reactive monoazo dyes for  
 cotton and leather)

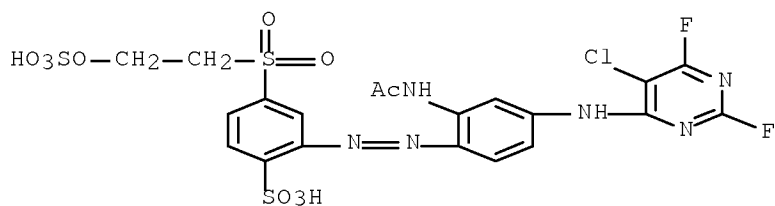
RN 176449-19-7 HCAPLUS  
 CN Benzenesulfonic acid, 2-[2-[2-[(aminocarbonyl)amino]-4-[(5-chloro-2,6-  
 difluoro-4-pyrimidinyl)amino]phenyl]diazenyl]-5-[[2-  
 (sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)



●2 Na

RN 176449-20-0 HCAPLUS  
 CN Benzenesulfonic acid, 2-[2-[2-(acetylamino)-4-[(5-chloro-2,6-difluoro-4-  
 pyrimidinyl)amino]phenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-,  
 sodium salt (1:2) (CA INDEX NAME)

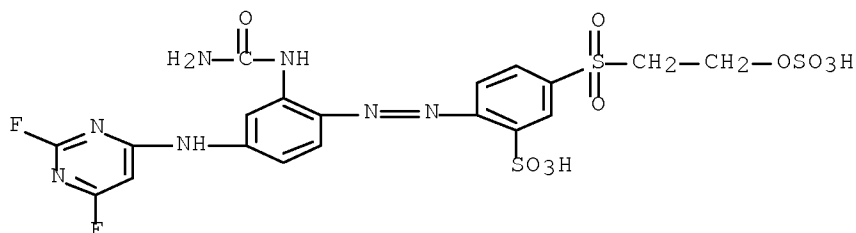
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●2 Na

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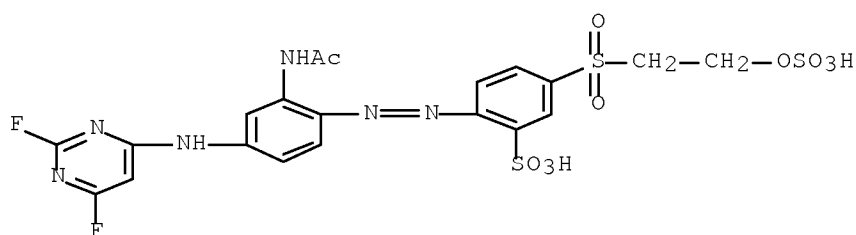
CN Benzenesulfonic acid, 2-[2-[2-[(aminocarbonyl)amino]-4-[(2,6-difluoro-4-pyrimidinyl)amino]phenyl]diazenyl]-5-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)



●2 Na

RN 176449-22-2 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[2-(acetylamino)-4-[(2,6-difluoro-4-pyrimidinyl)amino]phenyl]diazenyl]-5-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)



●2 Na

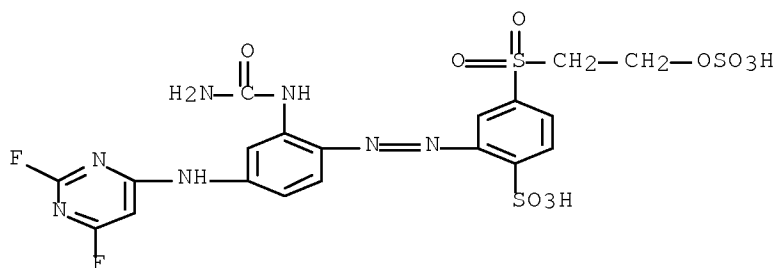
RN 176449-23-3 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[2-[(aminocarbonyl)amino]-4-[(2,6-difluoro-4-



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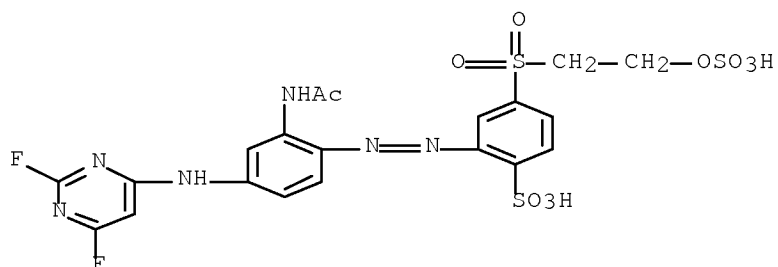
pyrimidinyl)amino]phenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-,  
sodium salt (1:2) (CA INDEX NAME)



●2 Na

RN 176449-24-4 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[2-(acetylamino)-4-[(2,6-difluoro-4-pyrimidinyl)amino]phenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-,  
sodium salt (1:2) (CA INDEX NAME)

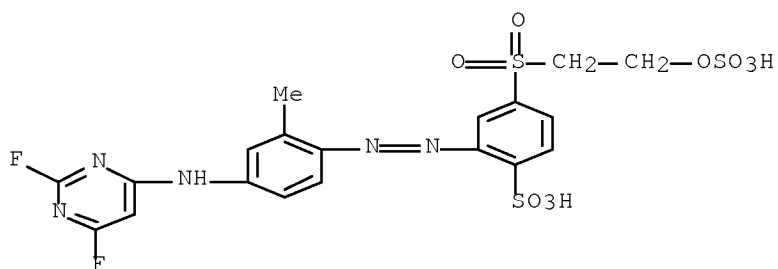


●2 Na

RN 176449-25-5 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[4-[(2,6-difluoro-4-pyrimidinyl)amino]-2-methylphenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2)  
(CA INDEX NAME)

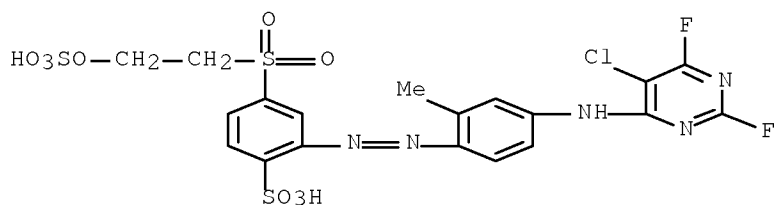
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●2 Na

RN 176449-26-6 HCAPLUS

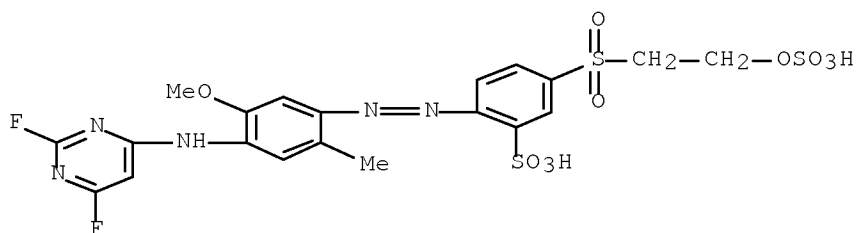
CN Benzenesulfonic acid, 2-[2-[4-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]-2-methylphenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)



●2 Na

RN 176449-27-7 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[4-[(2,6-difluoro-4-pyrimidinyl)amino]-5-methoxy-2-methylphenyl]diazenyl]-5-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)

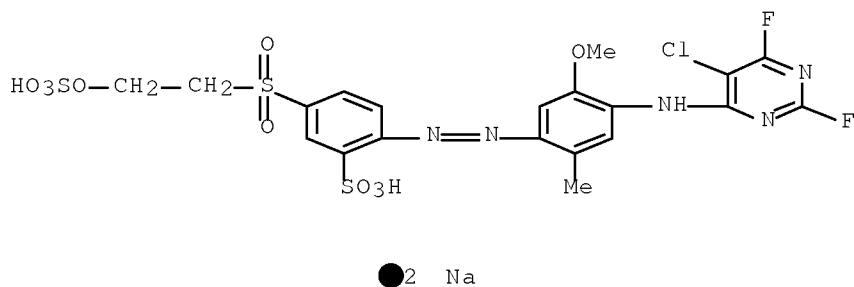


●2 Na

RN 176449-28-8 HCAPLUS

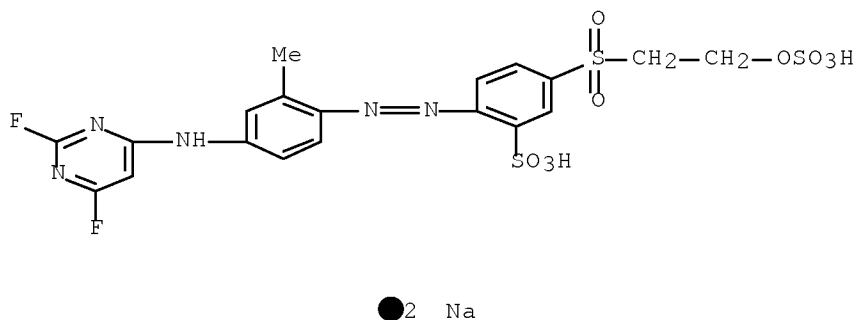
11/628659

CN Benzenesulfonic acid, 2-[2-[4-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]-5-methoxy-2-methylphenyl]diazenyl]-5-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)



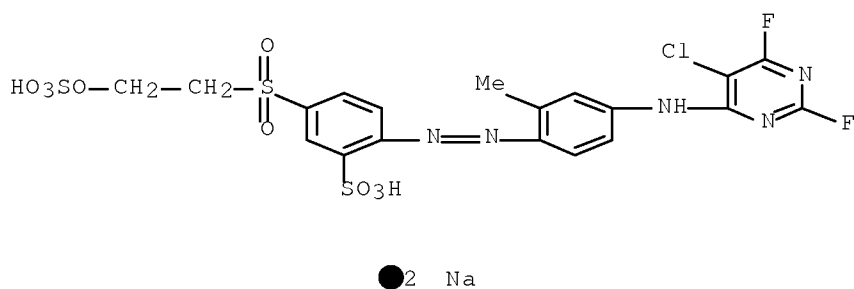
RN 176449-29-9 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[4-[(2,6-difluoro-4-pyrimidinyl)amino]-2-methylphenyl]diazenyl]-5-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)



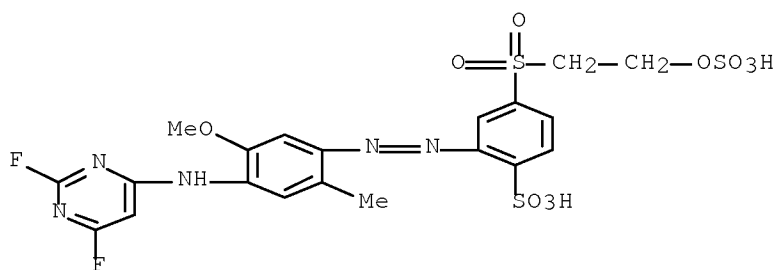
RN 176449-30-2 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[4-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]-2-methylphenyl]diazenyl]-5-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)



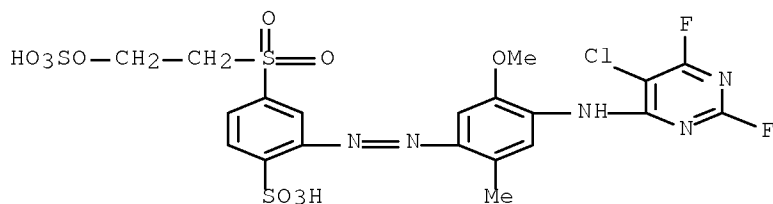
11/628659

RN 176449-31-3 HCAPLUS  
 CN Benzenesulfonic acid, 2-[2-[4-[(2,6-difluoro-4-pyrimidinyl)amino]-5-methoxy-2-methylphenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)



●2 Na

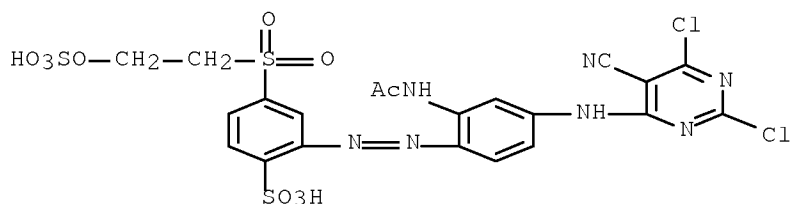
RN 176449-32-4 HCAPLUS  
 CN Benzenesulfonic acid, 2-[2-[4-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]-5-methoxy-2-methylphenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)



●2 Na

RN 176449-34-6 HCAPLUS  
 CN Benzenesulfonic acid, 2-[2-[2-(acetylamino)-4-[(2,6-dichloro-5-cyano-4-pyrimidinyl)amino]phenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)

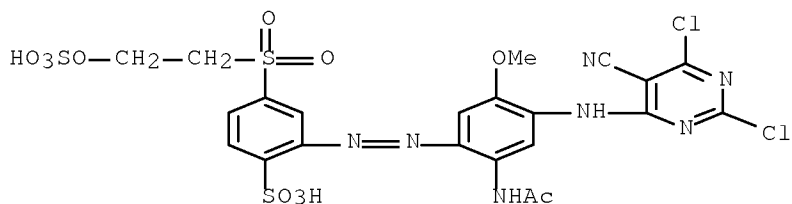
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●2 Na

RN 176449-35-7 HCAPLUS

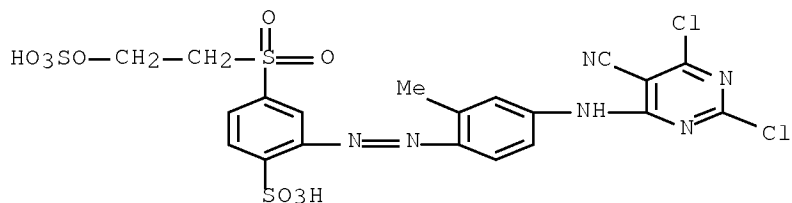
CN Benzenesulfonic acid, 2-[2-[2-(acetylamino)-4-[(2,6-dichloro-5-cyano-4-pyrimidinyl)amino]-5-methoxyphenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)



●2 Na

RN 176449-36-8 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[4-[(2,6-dichloro-5-cyano-4-pyrimidinyl)amino]-2-methylphenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)

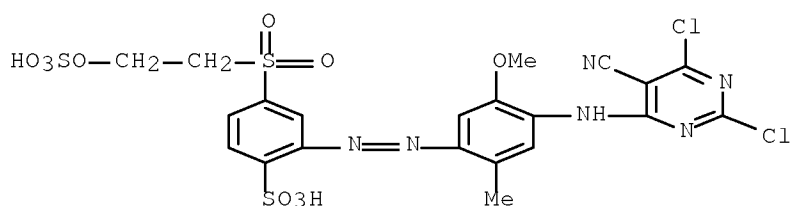


●2 Na

RN 176449-37-9 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[4-[(2,6-dichloro-5-cyano-4-pyrimidinyl)amino]-5-methoxy-2-methylphenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)

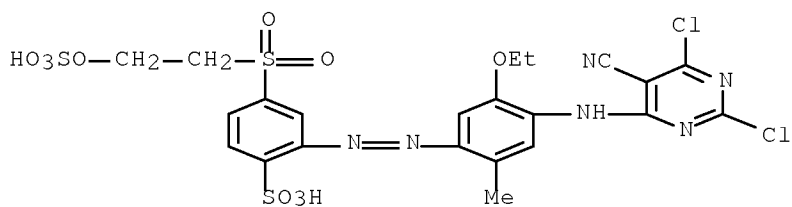
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●2 Na

RN 176449-38-0 HCAPLUS

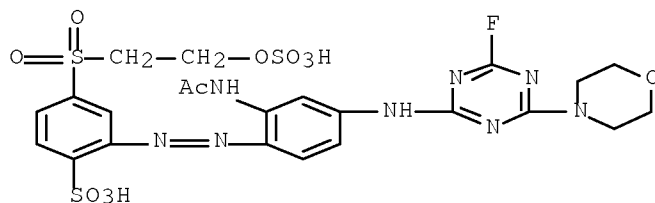
CN Benzenesulfonic acid, 2-[2-[4-[(2,6-dichloro-5-cyano-4-pyrimidinyl)amino]-5-ethoxy-2-methylphenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)



●2 Na

RN 176449-40-4 HCAPLUS

CN Benzenesulfonic acid, 2-[[2-(acetylamino)-4-[[4-fluoro-6-(4-morpholinyl)-1,3,5-triazin-2-yl]amino]phenyl]azo]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, dipotassium salt (9CI) (CA INDEX NAME)



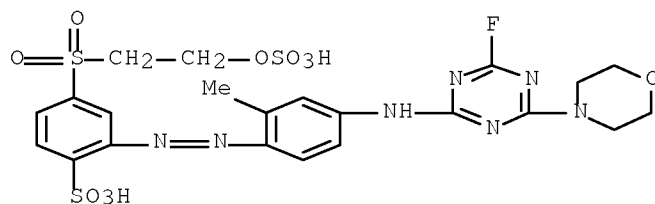
●2 K

RN 176449-41-5 HCAPLUS

CN Benzenesulfonic acid, 2-[[4-[[4-fluoro-6-(4-morpholinyl)-1,3,5-triazin-2-

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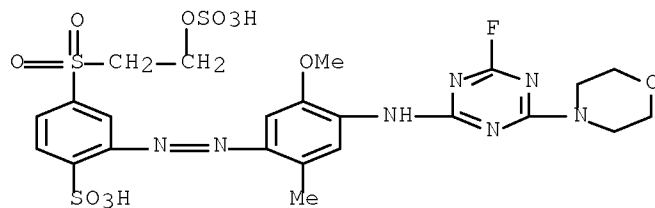
yl]amino]-2-methylphenyl]azo]-4-[[2-(sulfooxy)ethyl]sulfonyl]-,  
dipotassium salt (9CI) (CA INDEX NAME)



● 2 K

RN 176449-42-6 HCAPLUS

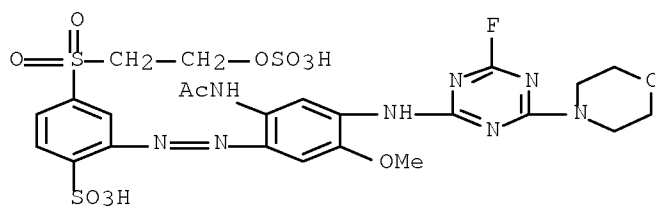
CN Benzenesulfonic acid, 2-[[4-[[4-fluoro-6-(4-morpholinyl)-1,3,5-triazin-2-yl]amino]-5-methoxy-2-methylphenyl]azo]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, dipotassium salt (9CI) (CA INDEX NAME)



● 2 K

RN 176449-43-7 HCAPLUS

CN Benzenesulfonic acid, 2-[[2-(acetylamino)-4-[[4-fluoro-6-(4-morpholinyl)-1,3,5-triazin-2-yl]amino]-5-methoxyphenyl]azo]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, dipotassium salt (9CI) (CA INDEX NAME)

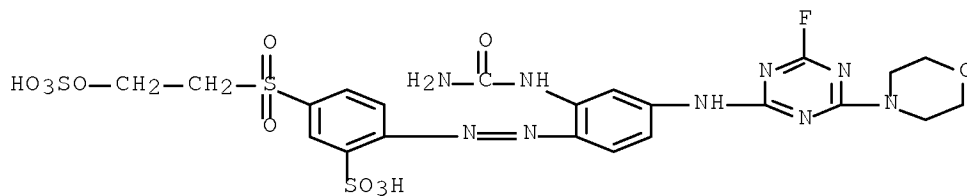


● 2 K

11/628659

RN 176449-44-8 HCAPLUS

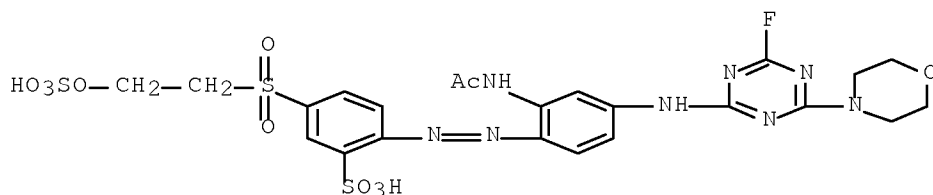
CN Benzenesulfonic acid, 2-[[2-[(aminocarbonyl)amino]-4-[[4-fluoro-6-(4-morpholinyl)-1,3,5-triazin-2-yl]amino]phenyl]azo]-5-[[2-(sulfooxy)ethyl]sulfonyl]-, dipotassium salt (9CI) (CA INDEX NAME)



● 2 K

RN 176449-45-9 HCAPLUS

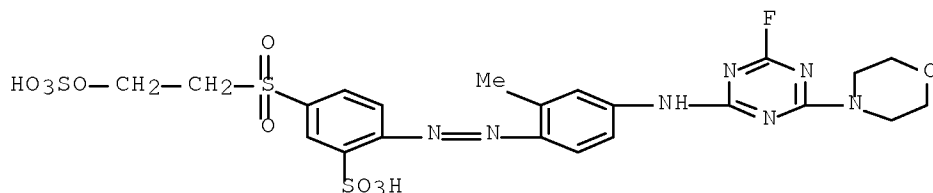
CN Benzenesulfonic acid, 2-[[2-(acetylamino)-4-[[4-fluoro-6-(4-morpholinyl)-1,3,5-triazin-2-yl]amino]phenyl]azo]-5-[[2-(sulfooxy)ethyl]sulfonyl]-, dipotassium salt (9CI) (CA INDEX NAME)



● 2 K

RN 176449-46-0 HCAPLUS

CN Benzenesulfonic acid, 2-[[4-[[4-fluoro-6-(4-morpholinyl)-1,3,5-triazin-2-yl]amino]-2-methylphenyl]azo]-5-[[2-(sulfooxy)ethyl]sulfonyl]-, dipotassium salt (9CI) (CA INDEX NAME)



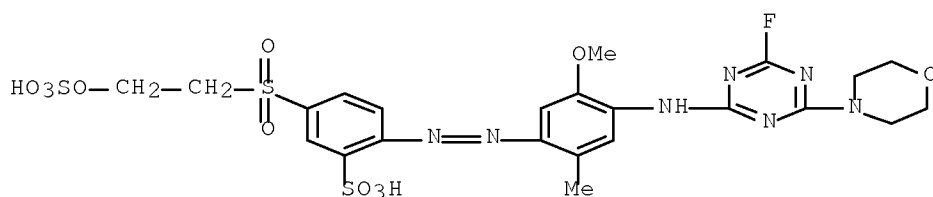
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RN 176449-47-1 HCAPLUS



11/628659

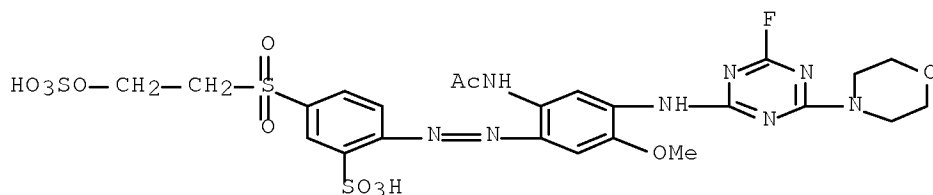
CN Benzenesulfonic acid, 2-[[4-[[4-fluoro-6-(4-morpholinyl)-1,3,5-triazin-2-yl]amino]-5-methoxy-2-methylphenyl]azo]-5-[[2-(sulfooxy)ethyl]sulfonyl]-, dipotassium salt (9CI) (CA INDEX NAME)



● 2 K

RN 176449-48-2 HCAPLUS

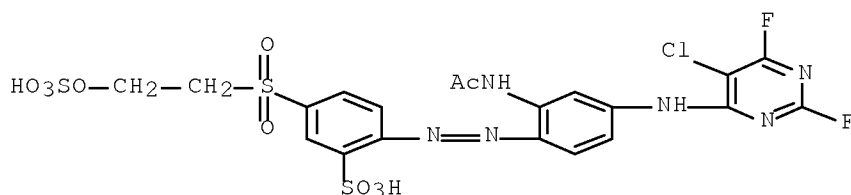
CN Benzenesulfonic acid, 2-[[2-(acetylamino)-4-[[4-fluoro-6-(4-morpholinyl)-1,3,5-triazin-2-yl]amino]-5-methoxyphenyl]azo]-5-[[2-(sulfooxy)ethyl]sulfonyl]-, dipotassium salt (9CI) (CA INDEX NAME)



● 2 K

RN 177347-90-9 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[2-(acetylamino)-4-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]phenyl]diazenyl]-5-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)



● 2 Na

IT 110-91-8, Morpholine, reactions 675-14-9, Cyanuric fluoride 697-83-6, 5-Chloro-2,4,6-trifluoropyrimidine

# 11/628659

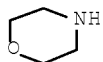
3029-64-9, 2,4,6-Trichloro-5-cyanopyrimidine 93696-22-1,  
2,4-Difluoro-6-morpholino-1,3,5-triazine

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of bifunctionally reactive monoazo dyes for  
cotton and leather)

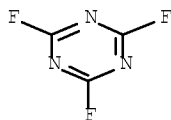
RN 110-91-8 HCAPLUS

CN Morpholine (CA INDEX NAME)



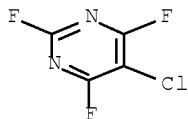
RN 675-14-9 HCAPLUS

CN 1,3,5-Triazine, 2,4,6-trifluoro- (CA INDEX NAME)



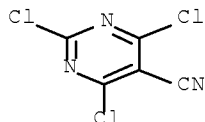
RN 697-83-6 HCAPLUS

CN Pyrimidine, 5-chloro-2,4,6-trifluoro- (CA INDEX NAME)



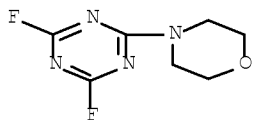
RN 3029-64-9 HCAPLUS

CN 5-Pyrimidinecarbonitrile, 2,4,6-trichloro- (CA INDEX NAME)

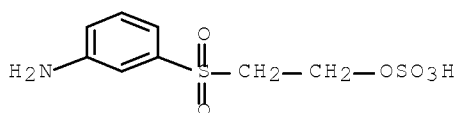


RN 93696-22-1 HCAPLUS

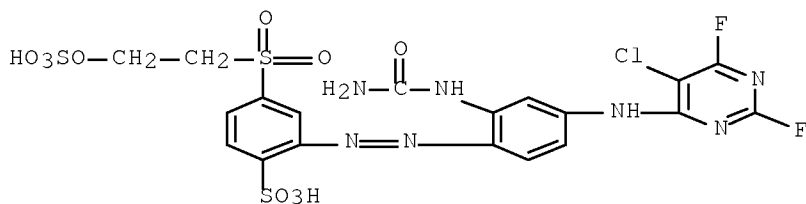
CN 1,3,5-Triazine, 2,4-difluoro-6-(4-morpholinyl)- (CA INDEX NAME)



IT 2494-88-4, 3-Aminophenyl  $\beta$ -sulfatoethyl sulfone  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (sulfonation of)  
 RN 2494-88-4 HCAPLUS  
 CN Ethanol, 2-[(3-aminophenyl)sulfonyl]-, 1-(hydrogen sulfate) (CA INDEX NAME)



IT 176449-18-6P  
 RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (yellow; preparation of bifunctionally reactive monoazo dyes for cotton and leather)  
 RN 176449-18-6 HCAPLUS  
 CN Benzenesulfonic acid, 2-[2-[2-[(aminocarbonyl)amino]-4-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]phenyl]diazanyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, sodium salt (1:2) (CA INDEX NAME)

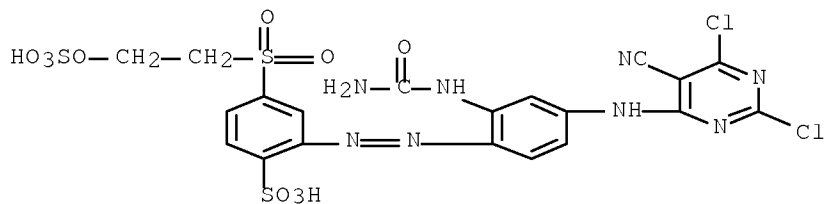


● 2 Na

IT 176449-33-5P 176449-39-1P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (yellow; preparation of bifunctionally reactive monoazo dyes for cotton and leather)  
 RN 176449-33-5 HCAPLUS  
 CN Benzenesulfonic acid, 2-[2-[2-[(aminocarbonyl)amino]-4-[(2,6-dichloro-5-cyano-4-pyrimidinyl)amino]phenyl]diazanyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]-

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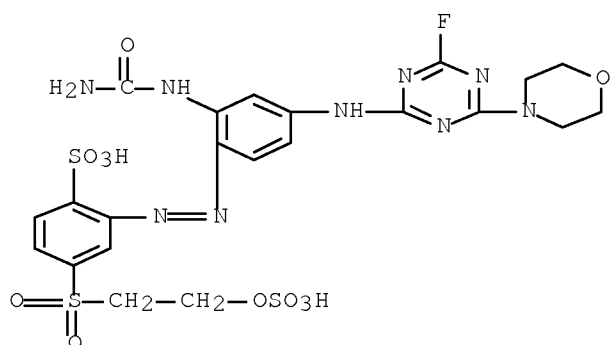
, sodium salt (1:2) (CA INDEX NAME)



●2 Na

RN 176449-39-1 HCAPLUS

CN Benzenesulfonic acid, 2-[[2-[(aminocarbonyl)amino]-4-[[4-fluoro-6-(4-morpholinyl)-1,3,5-triazin-2-yl]amino]phenyl]azo]-4-[[2-(sulfooxy)ethyl]sulfonyl]-, dipotassium salt (9CI) (CA INDEX NAME)



●2 K

IC ICM C09B062-028

ICS C09B062-245; C09B062-085; C09B062-51

ICA C09B067-22

CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 40, 45

ST reactive azo dye cotton textile;  
leather reactive azo dye;  
sulfatoethyl sulfone reactive azo dye;  
halopyrimidine reactive azo dye

IT Leather

(dyeing or printing of cotton or leather with  
bifunctionally reactive monoazo dyes)

IT Dyeing

Textile printing

(of cotton or leather with bifunctionally reactive  
monoazo dyes)

- IT Dyes, reactive  
(azo, bifunctional; reactive monoazo dyes  
and their preparation and use)
- IT 25711-72-2, (m-Aminophenyl)urea  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(coupling component; preparation of bifunctionally reactive  
monoazo dyes for cotton and leather)
- IT 41261-80-7P, 2-Amino-4-( $\beta$ -  
sulfatoethylsulfonyl)benzenesulfonic acid 174491-68-0P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(intermediate; preparation of bifunctionally reactive monoazo  
dyes for cotton and leather)
- IT 176449-19-7P 176449-20-0P 176449-21-1P  
176449-22-2P 176449-23-3P 176449-24-4P  
176449-25-5P 176449-26-6P 176449-27-7P  
176449-28-8P 176449-29-9P 176449-30-2P  
176449-31-3P 176449-32-4P 176449-34-6P  
176449-35-7P 176449-36-8P 176449-37-9P  
176449-38-0P 176449-40-4P 176449-41-5P  
176449-42-6P 176449-43-7P 176449-44-8P  
176449-45-9P 176449-46-0P 176449-47-1P  
176449-48-2P 177347-90-9P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(preparation of bifunctionally reactive monoazo dyes for  
cotton and leather)
- IT 110-91-8, Morpholine, reactions 675-14-9, Cyanuric  
fluoride 697-83-6, 5-Chloro-2,4,6-trifluoropyrimidine  
3029-64-9, 2,4,6-Trichloro-5-cyanopyrimidine 93696-22-1,  
2,4-Difluoro-6-morpholino-1,3,5-triazine  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of bifunctionally reactive monoazo dyes for  
cotton and leather)
- IT 2494-88-4, 3-Aminophenyl  $\beta$ -sulfatoethyl sulfone  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(sulfonation of)
- IT 176449-18-6P  
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical  
process); TEM (Technical or engineered material use); PREP (Preparation);  
PROC (Process); USES (Uses)  
(yellow; preparation of bifunctionally reactive monoazo  
dyes for cotton and leather)
- IT 176449-33-5P 176449-39-1P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(yellow; preparation of bifunctionally reactive monoazo  
dyes for cotton and leather)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 17 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1996:167610 HCAPLUS Full-text

DOCUMENT NUMBER: 124:204933

ORIGINAL REFERENCE NO.: 124:37849a,37852a

TITLE: Reactive monoazo dyes, their  
preparation and their use

INVENTOR(S): Lehr, Friedrich

PATENT ASSIGNEE(S): Sandoz-Patent-GmbH, Germany

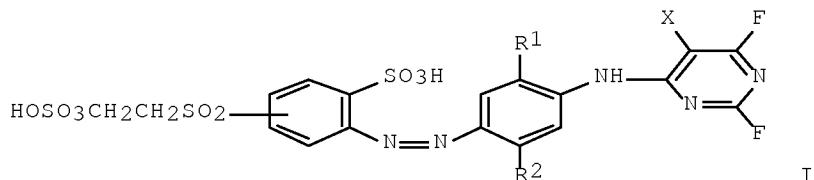
SOURCE: Ger. Offen., 7 pp.

## 11/628659

DOCUMENT TYPE: CODEN: GWXXBX  
 LANGUAGE: Patent  
 German  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

| PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE           |
|--|------|----------|-----------------|----------------|
| DE 4425222   | A1   | 19960118 | DE 1994-4425222 | 19940716 <--   |
| WO 9602593   | A1   | 19960201 | WO 1995-EP2779  | 19950714 <--   |
| W: BR, CN, JP, KR, MX, US  |      |          |                 |                |
| RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE |      |          |                 |                |
| ZA 9505893   | A    | 19970114 | ZA 1995-5893    | 19950714 <--   |
| EP 772652  | A1   | 19970514 | EP 1995-926893  | 19950714 <--   |
| EP 772652  | B1   | 20010829 |                 |                |
| R: CH, DE, ES, FR, GB, IT, LI, PT                                  |      |          |                 |                |
| CN 1152930   | A    | 19970625 | CN 1995-194146  | 19950714 <--   |
| CN 1090655   | C    | 20020911 |                 |                |
| BR 9508283   | A    | 19971223 | BR 1995-8283    | 19950714 <--   |
| JP 10504330  | T    | 19980428 | JP 1996-504698  | 19950714 <--   |
| JP 3829992   | B2   | 20061004 |                 |                |
| ES 2162931   | T3   | 20020116 | ES 1995-926893  | 19950714 <--   |
| PT 772652  | T    | 20020228 | PT 1995-926893  | 19950714 <--   |
| US 5747657   | A    | 19980505 | US 1997-765786  | 19970114 <--   |
| PRIORITY APPLN. INFO.:   |      |          | DE 1994-4425222 | A 19940716 <-- |
|  |      |          | DE 1994-4435380 | A 19941004 <-- |
|  |      |          | WO 1995-EP2779  | W 19950714 <-- |

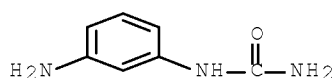
OTHER SOURCE(S): CASREACT 124:204933; MARPAT 124:204933  
 GI



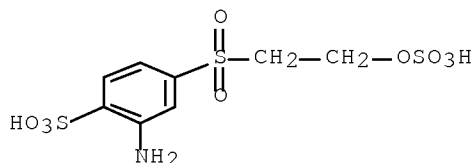
AB The dyes (I; R1 = H, Me, OMe; R2 = H, Me, AcNH, ureido; X = H, Cl) are obtained from 5-chloro-2,4,6-trifluoropyrimidine (II) or tetrafluoropyrimidine and the requisite aminophenylazobenzenesulfonic acid derivative I show good fastness when used to dye or print leather or cellulosics. Thus, 3-( $\beta$ -sulfatoethylsulfonyl)aniline was sulfated and the product was diazotized and coupled with m-aminophenylurea to give a substituted aniline which was condensed with II to provide a dye ( $\lambda_{\max}$  378 nm) which conferred fast golden yellow shades on cotton.

IT 25711-72-2, m-Aminophenylurea  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (coupling component; reactive monoazo dyes for cellulosics and leather)

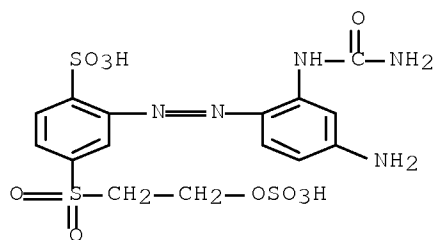
RN 25711-72-2 HCAPLUS  
 CN Urea, N-(3-aminophenyl)- (CA INDEX NAME)



IT 41261-80-7P, 2-Amino-4-(2-sulfatoethylsulfonyl)benzenesulfonic acid  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate, diazo component; reactive monoazo dyes for cellulose and leather)  
 RN 41261-80-7 HCAPLUS  
 CN Benzenesulfonic acid, 2-amino-4-[[2-(sulfoxy)ethyl]sulfonyl]- (CA INDEX NAME)



IT 174491-68-0P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; reactive monoazo dyes for cellulose and leather)  
 RN 174491-68-0 HCAPLUS  
 CN Benzenesulfonic acid, 2-[2-[4-amino-2-[(aminocarbonyl)amino]phenyl]diazenyl]-4-[[2-(sulfoxy)ethyl]sulfonyl]- (CA INDEX NAME)



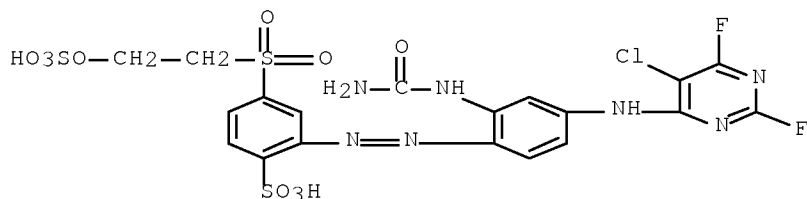
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 174491-55-5P 174491-56-6P 174491-57-7P  
 174491-58-8P 174491-59-9P 174491-60-2P  
 174491-61-3P 174491-62-4P 174491-63-5P  
 174491-64-6P 174491-65-7P 174491-66-8P  
 174491-67-9P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

# 11/628659

(reactive monoazo dyes for cellulose and leather)

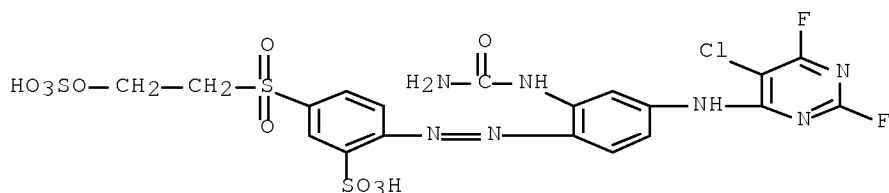
RN 174491-52-2 HCAPLUS

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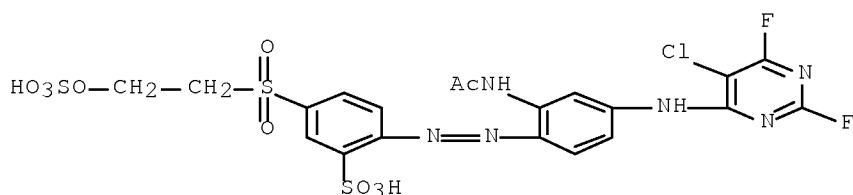
RN 174491-53-3 HCAPLUS

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RN 174491-54-4 HCAPLUS

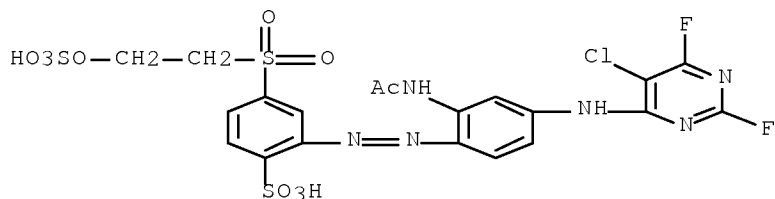
CN Benzenesulfonic acid, 2-[2-[2-(acetylamino)-4-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]phenyl]diazenyl]-5-[[2-(sulfoxy)ethyl]sulfonyl]- (CA INDEX NAME)



RN 174491-55-5 HCAPLUS

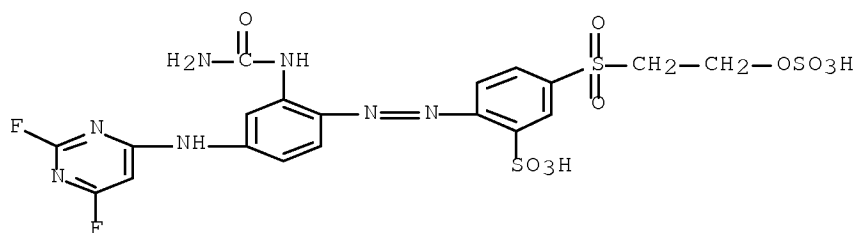
CN Benzenesulfonic acid, 2-[2-[2-(acetylamino)-4-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]phenyl]diazenyl]-4-[[2-(sulfoxy)ethyl]sulfonyl]- (CA INDEX NAME)





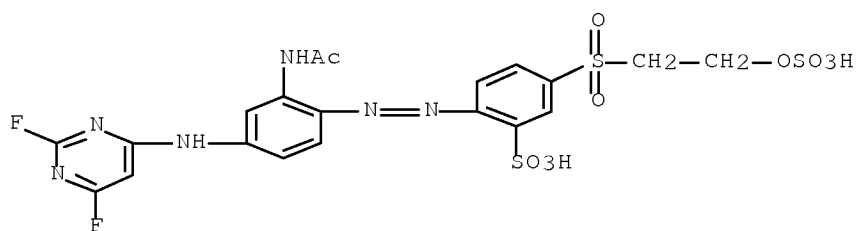
RN 174491-56-6 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[2-[(aminocarbonyl)amino]-4-[(2,6-difluoro-4-pyrimidinyl)amino]phenyl]diazenyl]-5-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)



RN 174491-57-7 HCAPLUS

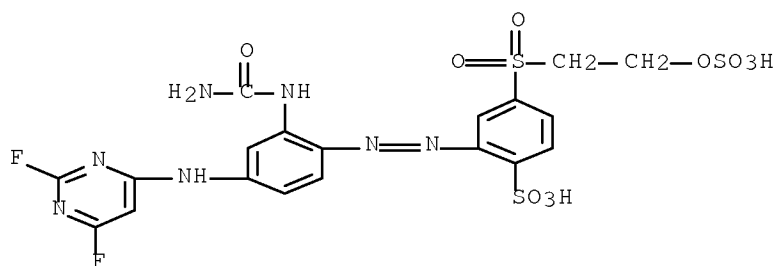
CN Benzenesulfonic acid, 2-[2-[2-(acetylamino)-4-[(2,6-difluoro-4-pyrimidinyl)amino]phenyl]diazenyl]-5-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)



RN 174491-58-8 HCAPLUS

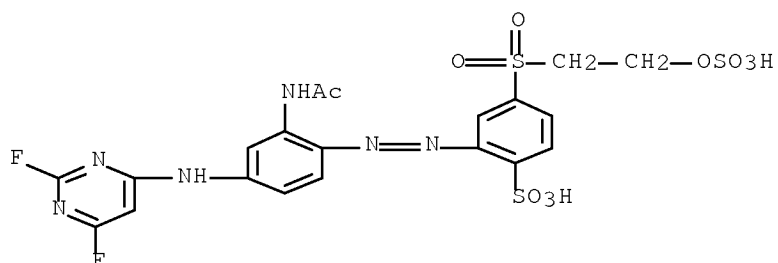
CN Benzenesulfonic acid, 2-[2-[2-[(aminocarbonyl)amino]-4-[(2,6-difluoro-4-pyrimidinyl)amino]phenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)

11/628659



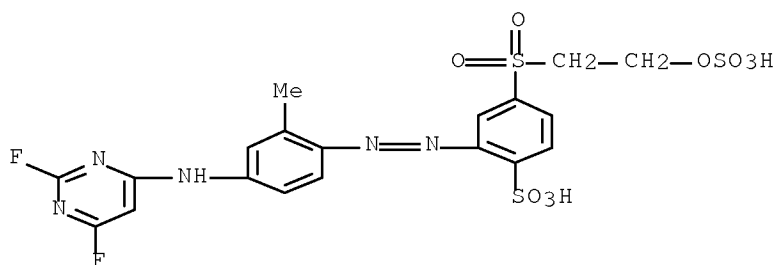
RN 174491-59-9 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[2-(acetamido)-4-[(2,6-difluoro-4-pyrimidinyl)amino]phenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)



RN 174491-60-2 HCAPLUS

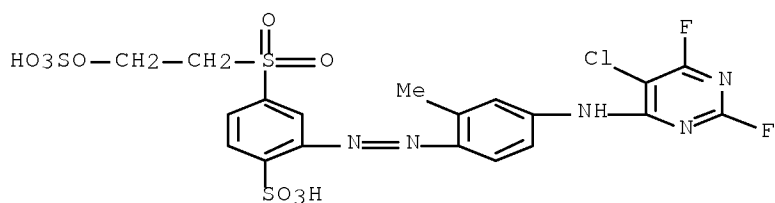
CN Benzenesulfonic acid, 2-[2-[4-[(2,6-difluoro-4-pyrimidinyl)amino]-2-methylphenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)



RN 174491-61-3 HCAPLUS

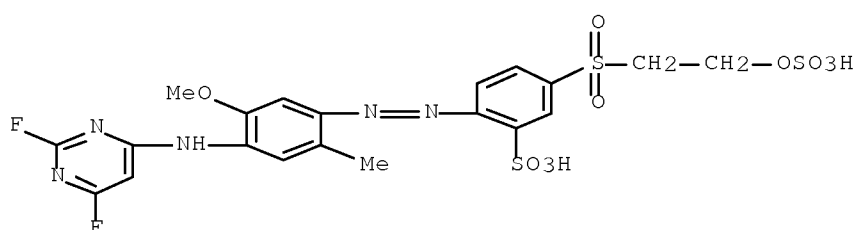
CN Benzenesulfonic acid, 2-[2-[4-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]-2-methylphenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)

11/628659



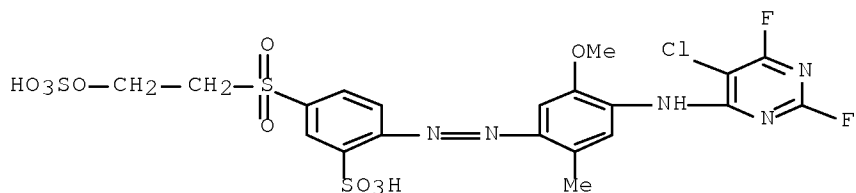
RN 174491-62-4 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[4-[(2,6-difluoro-4-pyrimidinyl)amino]-5-methoxy-2-methylphenyl]diazenyl]-5-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)



RN 174491-63-5 HCAPLUS

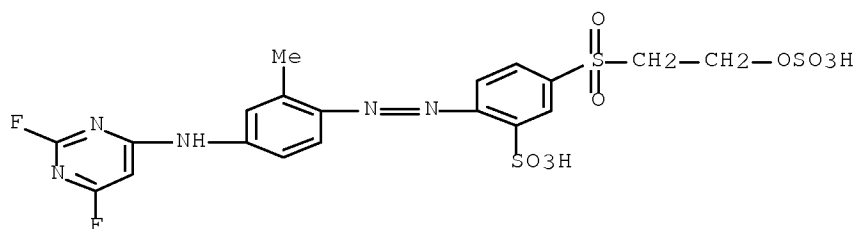
CN Benzenesulfonic acid, 2-[2-[4-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]-5-methoxy-2-methylphenyl]diazenyl]-5-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)



RN 174491-64-6 HCAPLUS

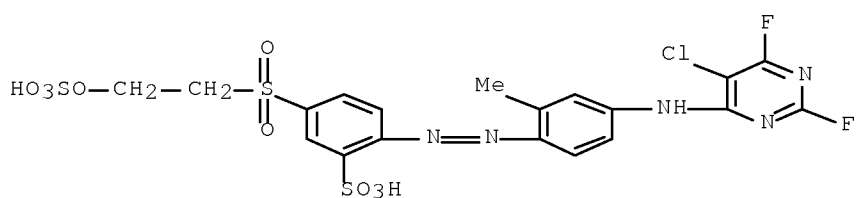
CN Benzenesulfonic acid, 2-[2-[4-[(2,6-difluoro-4-pyrimidinyl)amino]-2-methylphenyl]diazenyl]-5-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)

11/628659



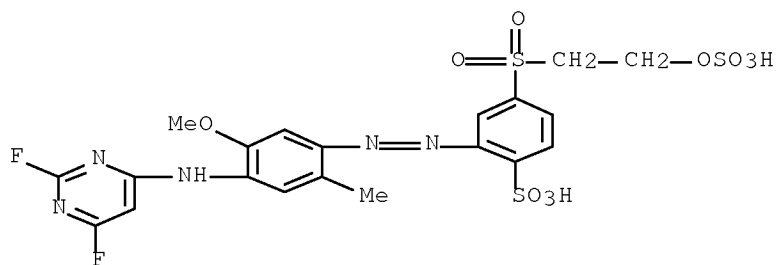
RN 174491-65-7 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[4-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]-2-methylphenyl]diazenyl]-5-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)



RN 174491-66-8 HCAPLUS

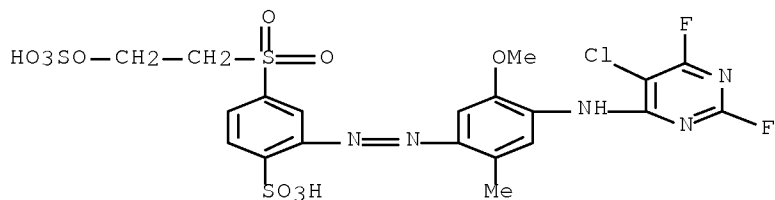
CN Benzenesulfonic acid, 2-[2-[4-[(2,6-difluoro-4-pyrimidinyl)amino]-5-methoxy-2-methylphenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)



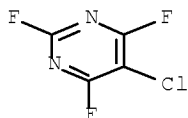
RN 174491-67-9 HCAPLUS

CN Benzenesulfonic acid, 2-[2-[4-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]-5-methoxy-2-methylphenyl]diazenyl]-4-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)

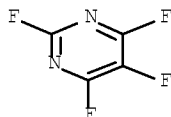
11/628659



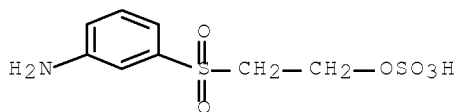
IT 697-83-6, 5-Chloro-2,4,6-trifluoropyrimidine 767-79-3,  
Tetrafluoropyrimidine 2494-88-4,  
3-(β-Sulfatoethylsulfonyl)aniline  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material; reactive monoazo dyes for  
cellulosics and leather)  
RN 697-83-6 HCAPLUS  
CN Pyrimidine, 5-chloro-2,4,6-trifluoro- (CA INDEX NAME)



RN 767-79-3 HCAPLUS  
CN Pyrimidine, 2,4,5,6-tetrafluoro- (CA INDEX NAME)



RN 2494-88-4 HCAPLUS  
CN Ethanol, 2-[(3-aminophenyl)sulfonyl]-, 1-(hydrogen sulfate) (CA INDEX NAME)



IC ICM C09B062-008  
ICS C09B067-22; C09B043-136; D06P001-38; D06P003-10; D06P003-66;  
D06P003-32; C07C317-32; C07D239-42  
ICA C09B062-51; C09B062-245; C09B029-085; D06P003-14; D06P003-24; D06P003-85;

D06P003-87; C09D011-02; C07C317-34; C07C245-08; C07C309-46

CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
Section cross-reference(s): 40, 45

ST reactive azo dye prepn; cellulosic leather dyeing reactive azo

IT Leather  
(preparation of reactive monoazo dyes for cellulose and leather)

IT Dyes, reactive  
(azo, preparation of monoazo dyes for cellulose and leather)

IT Dyeing  
(reactive, of leather and cellulose with prepared monoazo dyes)

IT 25711-72-2, m-Aminophenylurea  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(coupling component; reactive monoazo dyes for cellulose and leather)

IT 41261-80-7P, 2-Amino-4-(2-sulfatoethylsulfonyl)benzenesulfonic acid  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate, diazo component; reactive monoazo dyes for cellulose and leather)

IT 174491-68-0P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; reactive monoazo dyes for cellulose and leather)

IT 174491-52-2P 174491-53-3P 174491-54-4P  
174491-55-5P 174491-56-6P 174491-57-7P  
174491-58-8P 174491-59-9P 174491-60-2P  
174491-61-3P 174491-62-4P 174491-63-5P  
174491-64-6P 174491-65-7P 174491-66-8P  
174491-67-9P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(reactive monoazo dyes for cellulose and leather)

IT 697-83-6, 5-Chloro-2,4,6-trifluoropyrimidine 767-79-3, Tetrafluoropyrimidine 2494-88-4, 3-( $\beta$ -Sulfatoethylsulfonyl)aniline  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material; reactive monoazo dyes for cellulose and leather)

L31 ANSWER 18 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1994:57143 HCAPLUS Full-text

DOCUMENT NUMBER: 120:57143

ORIGINAL REFERENCE NO.: 120:10387a,10390a

TITLE: Manufacture of leather from reptile skin

INVENTOR(S): Kitano, Eiichi

PATENT ASSIGNEE(S): Kitano Kagaku Jugen, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
|-------------|------|----------|-----------------|--------------|
| JP 05179300 | A    | 19930720 | JP 1992-18304   | 19920106 <-- |
| JP 06055960 | B    | 19940727 |                 |              |

PRIORITY APPLN. INFO.: JP 1992-18304 19920106 <--

AB Soft and wash-resistant ~~leather~~ from snakes and lizards, useful for sports product, handbags, and garments (no data), are manufactured using a fatliquoring agent comprising long-chain dialkylsulfosuccinate salts, long-chain monoalkyl phosphate ester, maleic anhydride-olefin copolymer, and diethylene glycol monobutyl ether. The method also features a 2-stage ~~dyeing~~ process using vinylsulfone type ~~reactive dyes~~ and then phosphated dyes and a 2-stage bleaching process using Na chlorite and then K permanganate and Na bisulfite.

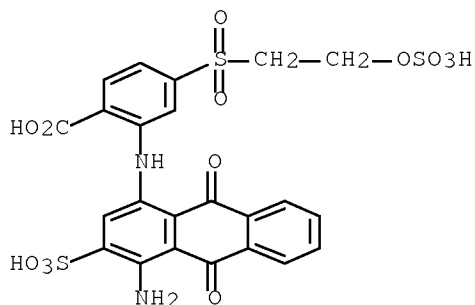
IT 20640-71-5

RL: USES (Uses)

(dyeing with, for reptile ~~leather~~)

RN 20640-71-5 HCAPLUS

CN Benzoic acid, 2-[(4-amino-9,10-dihydro-9,10-dioxo-3-sulfo-1-anthracenyl)amino]-4-[[2-(sulfooxy)ethyl]sulfonyl]- (CA INDEX NAME)



IC ICM C14C009-00

ICS C14C003-16; D06L003-02; D06L003-08; D06L003-14

CC 45-3 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

ST ~~leather~~ manuf reptile skin; fatliquoring agent reptile

~~leather~~ manuf; bleaching dyeing reptile ~~leather~~ manuf

IT Dyeing

(in manufacture of soft and wash-resistant reptile ~~leather~~)

IT Reptile

(~~leather~~ from, manufacture of, soft and wash-resistant)

IT ~~Leather~~

(reptile, manufacture of soft and wash-resistant, fatliquoring agents in)

IT Alkenes, polymers

RL: USES (Uses)

(polymers, with maleic anhydride, fatliquoring agent composition, for reptile ~~leather~~)

IT Bleaching

(two-stage, in manufacture of soft and wash-resistant reptile ~~leather~~)

IT 7631-90-5, Sodium bisulfite 7722-64-7, Potassium permanganate

7758-19-2, Sodium chlorite

RL: USES (Uses)

(bleaching agent, in manufacture of reptile ~~leather~~)

IT 20640-71-5

RL: USES (Uses)

(dyeing with, for reptile leather)

IT 108-31-6D, Maleic anhydride, alkene copolymer 112-34-5, Diethylene glycol monobutyl ether 5138-18-1D, Sulfosuccinic acid, C12-18 esters, sodium salts 7664-38-2D, Phosphoric acid, monoalkyl esters

RL: USES (Uses)

(fatliquoring agent composition, for reptile leather)

L31 ANSWER 19 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1993:583219 HCAPLUS Full-text

DOCUMENT NUMBER: 119:183219

ORIGINAL REFERENCE NO.: 119:32727a,32730a

TITLE: Characterizations of black dyes and their color fastness on leather

AUTHOR(S): Nakamura, Masashi

CORPORATE SOURCE: Leather Lab., Osaka Prefect. Ind. Technol. Res. Inst., Suita, 564, Japan

SOURCE: Hikaku Kagaku (Chemistry) (1991), 37(2), 89-102

CODEN: HIKAAF; ISSN: 0018-1811

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB Com. black dyes were classified into 6 groups according to the Rf of the main spots on paper- and thin-layer chromatog. to establish a guide for selecting dyes to give good color fastness on leather. The relation was examined between Rf and dye properties (visible region absorption spectra) and dyeing properties on chrome leather (dye exhaustion, penetration, color strength of grain surface, fastness to light, rubbing, alkaline perspiration, and wet- or dry-cleaning). Color fastness increased with decreasing Rf, and the dyes with lowest Rf and with relatively stronger hydrophobicity and larger mol. weight showed the best color fastness.

IT 1064-48-8, C.I. Acid Black 1 1787-61-7, C.I. Mordant Black 11 1937-37-7 2052-25-7 2538-85-4, C.I. Mordant Black 17 2945-96-2, C.I. Direct Black 17 3071-73-6, C.I. Acid Black 24 3564-14-5, C.I. Mordant Black 3 3618-58-4, C.I. Mordant Black 1 3618-60-8, C.I. Mordant Black 7 5979-27-1, C.I. Mordant Black 51 6262-07-3, C.I. Acid Black 26 6358-80-1, C.I. Acid Black 94 6409-86-5, C.I. Direct Black 97 6428-31-5, C.I. Direct Black 19 6428-33-2, C.I. Direct Black 32 6473-13-8, C.I. Direct Black 22 16894-32-9, C.I. Direct Black 122 17095-24-8, C.I. Reactive Black 5 32517-36-5, C.I. Acid Black 63 54804-85-2, C.I. Direct Black 154 57693-14-8, C.I. Acid Black 172

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

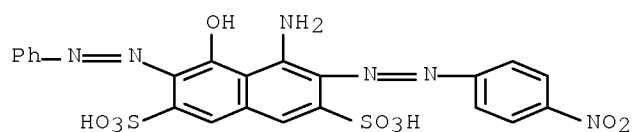
(color fastness of, for dyeing of leather)

RN 1064-48-8 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3-[2-(4-nitrophenyl)diazenyl]-6-(2-phenyldiazenyl)-, sodium salt (1:2) (CA INDEX NAME)



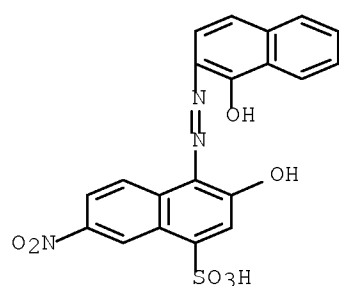
11/628659



●2 Na

RN 1787-61-7 HCAPLUS

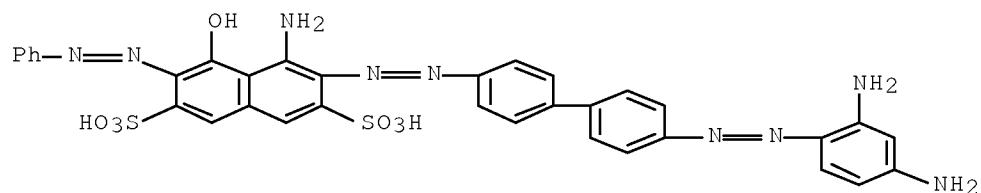
CN 1-Naphthalenesulfonic acid, 3-hydroxy-4-[2-(1-hydroxy-2-naphthalenyl)diazenyl]-7-nitro-, sodium salt (1:1) (CA INDEX NAME)



● Na

RN 1937-37-7 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-3-[2-[4'-(2,4-diaminophenyl)diazenyl][1,1'-biphenyl]-4-yl]diazenyl]-5-hydroxy-6-(2-phenyldiazenyl)-, sodium salt (1:2) (CA INDEX NAME)

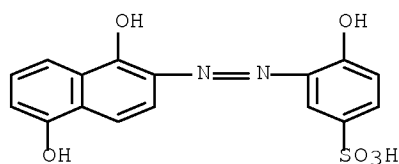


●2 Na

RN 2052-25-7 HCAPLUS

CN Benzenesulfonic acid, 3-[2-(1,5-dihydroxy-2-naphthalenyl)diazenyl]-4-hydroxy-, sodium salt (1:1) (CA INDEX NAME)

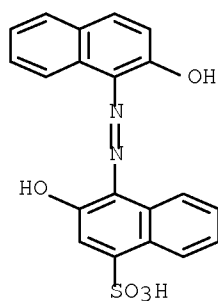
11/628659



● Na

RN 2538-85-4 HCAPLUS

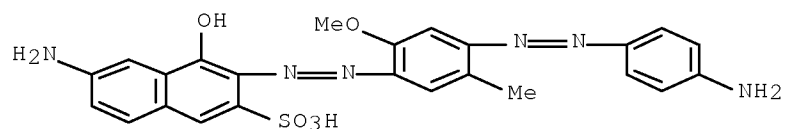
CN 1-Naphthalenesulfonic acid, 3-hydroxy-4-[2-(2-hydroxy-1-naphthalenyl)diazenyl]-, sodium salt (1:1) (CA INDEX NAME)



● Na

RN 2945-96-2 HCAPLUS

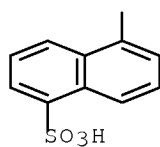
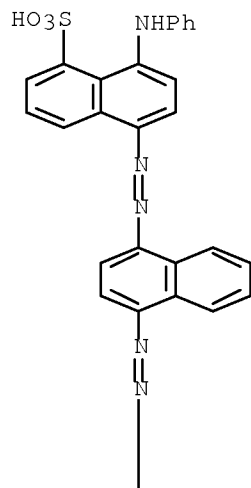
CN 2-Naphthalenesulfonic acid, 6-amino-3-[2-[4-[2-(4-aminophenyl)diazenyl]-2-methoxy-5-methylphenyl]diazenyl]-4-hydroxy-, sodium salt (1:1) (CA INDEX NAME)



● Na

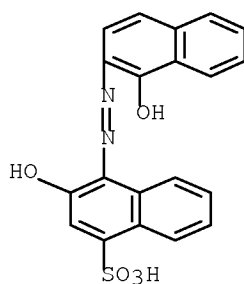
RN 3071-73-6 HCAPLUS

CN 1-Naphthalenesulfonic acid, 8-(phenylamino)-5-[2-[4-[2-(5-sulfo-1-naphthalenyl)diazenyl]-1-naphthalenyl]diazenyl]-, sodium salt (1:2) (CA INDEX NAME)



● 2 Na

RN 3564-14-5 HCAPLUS  
 CN 1-Naphthalenesulfonic acid, 3-hydroxy-4-[2-(1-hydroxy-2-naphthalenyl)diazenyl]-, sodium salt (1:1) (CA INDEX NAME)

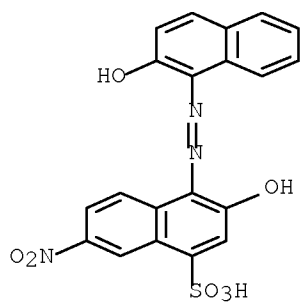


● Na

RN 3618-58-4 HCAPLUS

# 11/628659

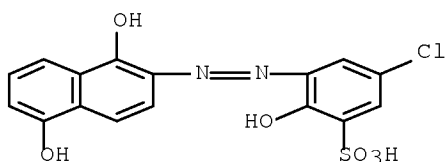
CN 1-Naphthalenesulfonic acid, 3-hydroxy-4-[2-(2-hydroxy-1-naphthalenyl)diazenyl]-7-nitro-, sodium salt (1:1) (CA INDEX NAME)



● Na

RN 3618-60-8 HCAPLUS

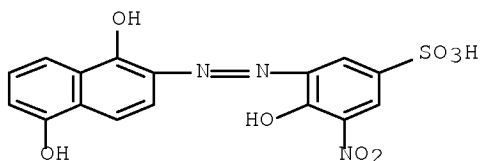
CN Benzenesulfonic acid, 5-chloro-3-[2-(1,5-dihydroxy-2-naphthalenyl)diazenyl]-2-hydroxy-, sodium salt (1:1) (CA INDEX NAME)



● Na

RN 5979-27-1 HCAPLUS

CN Benzenesulfonic acid, 3-[2-(1,5-dihydroxy-2-naphthalenyl)diazenyl]-4-hydroxy-5-nitro-, sodium salt (1:1) (CA INDEX NAME)



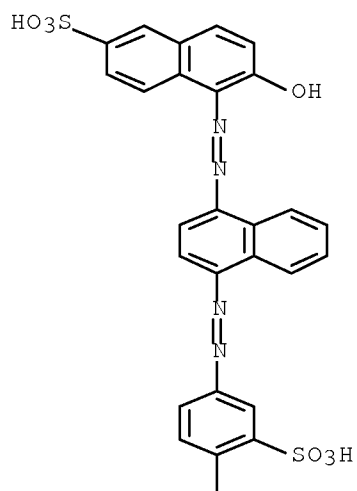
● Na

RN 6262-07-3 HCAPLUS

CN 2-Naphthalenesulfonic acid, 6-hydroxy-5-[2-[4-[2-[4-(phenylamino)-3-sulfophenyl]diazenyl]-1-naphthalenyl]diazenyl]-, sodium salt (1:2) (CA

INDEX NAME)

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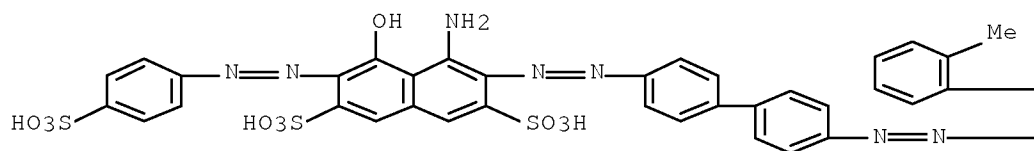


●2 Na

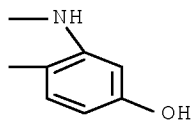
RN 6358-80-1 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3-[2-[4'-[2-[4-hydroxy-2-[(2-methylphenyl)amino]phenyl]diazenyl][1,1'-biphenyl]-4-yl]diazenyl]-6-[2-(4-sulfophenyl)diazenyl]-, sodium salt (1:3) (CA INDEX NAME)

PAGE 1-A



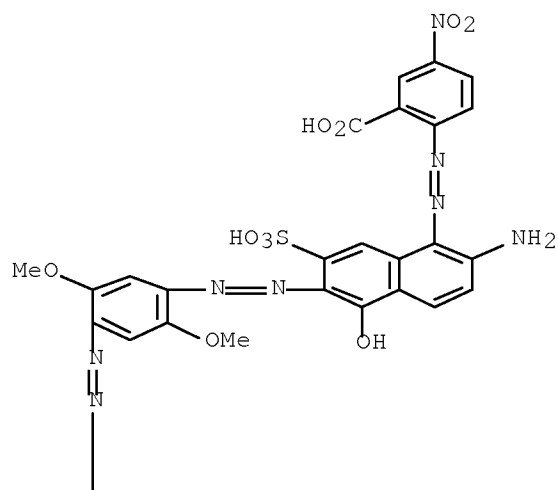
●3 Na



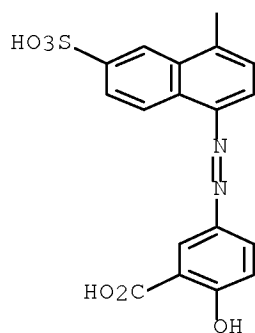
RN 6409-86-5 HCAPLUS

CN Benzoic acid, 2-[[2-amino-6-[[4-[[4-[(3-carboxy-4-hydroxyphenyl)azo]-7-sulfo-1-naphthalenyl]azo]-2,5-dimethoxyphenyl]azo]-5-hydroxy-7-sulfo-1-naphthalenyl]azo]-5-nitro-, tetrasodium salt (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

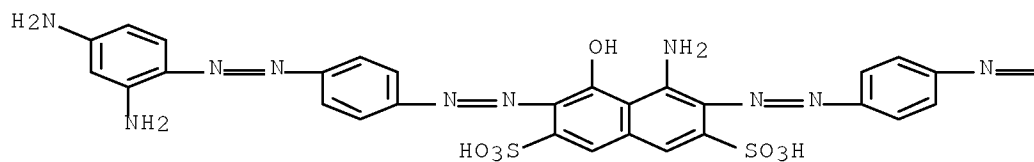


● 4 Na

RN 6428-31-5 HCAPLUS

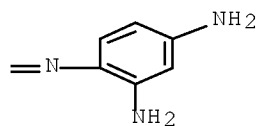
CN 2,7-Naphthalenedisulfonic acid, 4-amino-3,6-bis[2-[4-[2-(2,4-diaminophenyl)diazenyl]phenyl]diazenyl]-5-hydroxy-, sodium salt (1:2) (CA INDEX NAME)

PAGE 1-A



● 2 Na

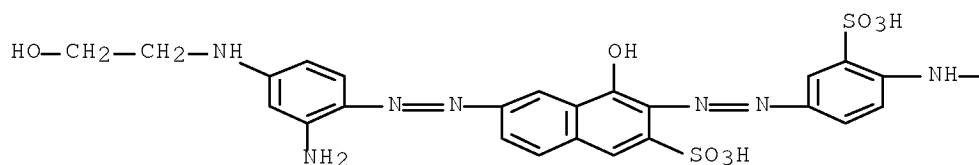
PAGE 1-B



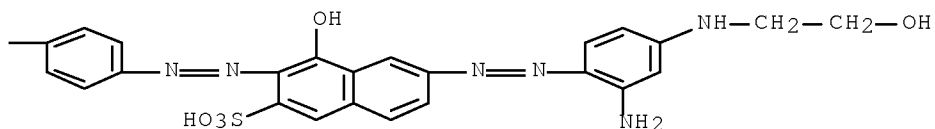
RN 6428-38-2 HCAPLUS

CN 2-Naphthalenesulfonic acid, 6-[2-[2-amino-4-[(2-hydroxyethyl)amino]phenyl]diazenyl]-3-[2-[4-[[4-[2-[7-[2-[2-amino-4-[(2-hydroxyethyl)amino]phenyl]diazenyl]-1-hydroxy-3-sulfo-2-naphthalenyl]diazenyl]phenyl]amino]-3-sulfo-2-phenyl]diazenyl]-4-hydroxy-, sodium salt (1:3) (CA INDEX NAME)

PAGE 1-A

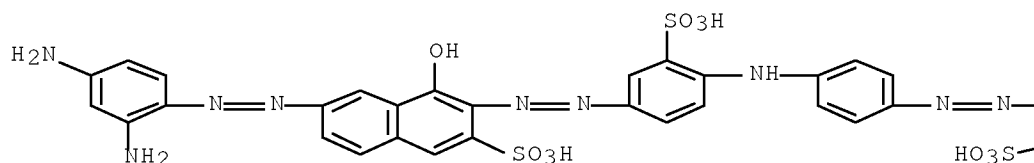


● 3 Na

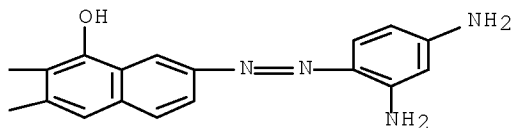


RN 6473-13-8 HCAPLUS

CN 2-Naphthalenesulfonic acid, 6-[2-(2,4-diaminophenyl)diazenyl]-3-[2-[4-[[4-[2-[7-[2-(2,4-diaminophenyl)diazenyl]-1-hydroxy-3-sulfo-2-naphthalenyl]diazenyl]phenyl]amino]-3-sulfo-2-naphthalenyl]diazenyl]-4-hydroxy-, sodium salt (1:3) (CA INDEX NAME)



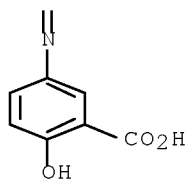
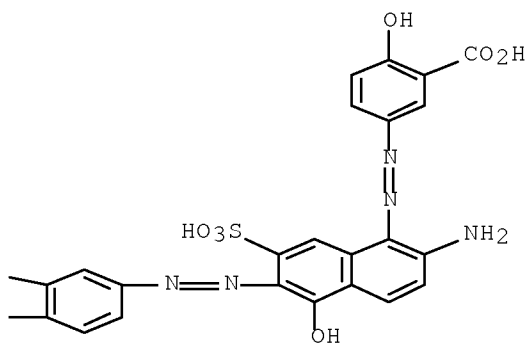
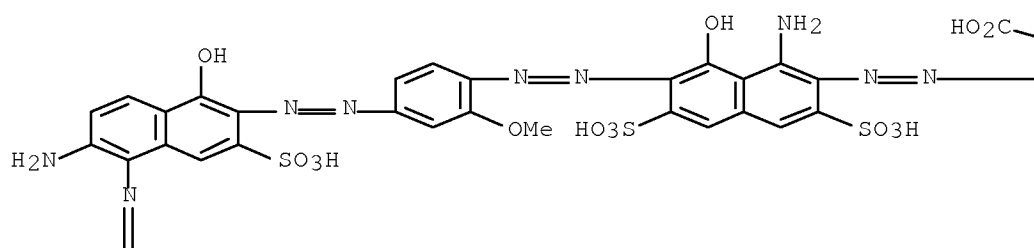
● 3 Na



RN 16894-32-9 HCAPLUS

CN Benzoic acid, 2-[2-[1-amino-7-[2-[4-[2-[6-amino-5-[2-(3-carboxy-4-hydroxyphenyl)diazenyl]-1-hydroxy-3-sulfo-2-naphthalenyl]diazenyl]-2-methoxyphenyl]diazenyl]-8-hydroxy-3,6-disulfo-2-naphthalenyl]diazenyl]-5-[2-[6-amino-5-[2-(3-carboxy-4-hydroxyphenyl)diazenyl]-1-hydroxy-3-sulfo-2-naphthalenyl]diazenyl]- (CA INDEX NAME)

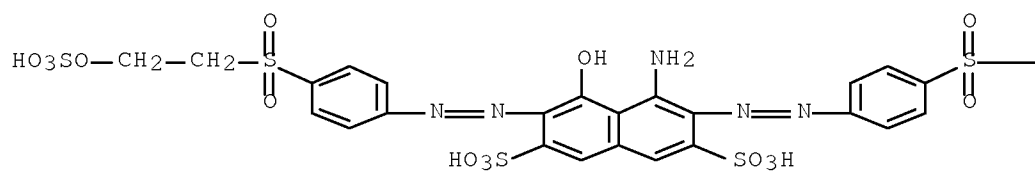




RN 17095-24-8 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3,6-bis[2-[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-, sodium salt (1:4) (CA INDEX NAME)

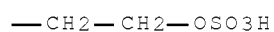
11/628659

PAGE 1-A



● 4 Na

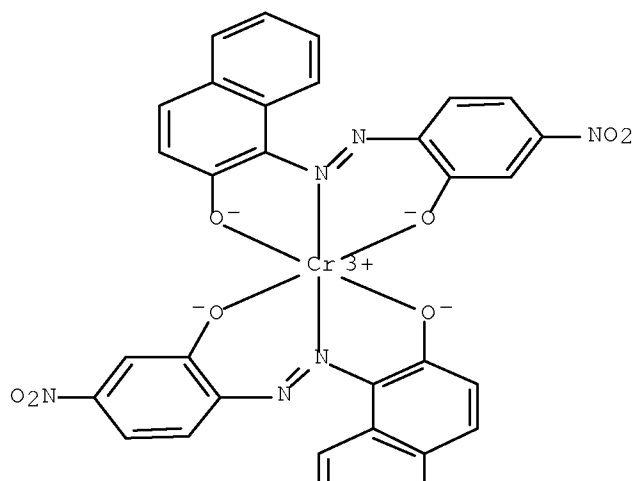
PAGE 1-B

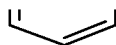


RN 32517-36-5 HCAPLUS

CN Chromate(1-), bis[1-[2-(hydroxy-κO)-4-nitrophenyl]diazeryl-2-naphthalenolato(2-)-κO]-, hydrogen (1:1), (OC-6-22')- (CA INDEX NAME)

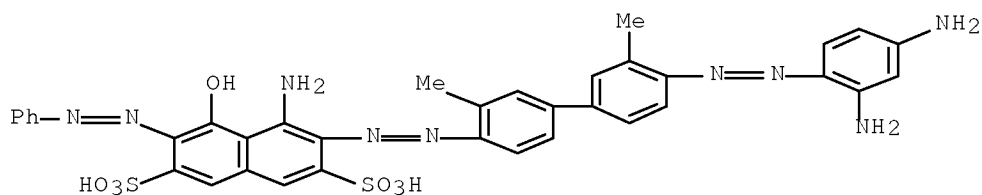
PAGE 1-A





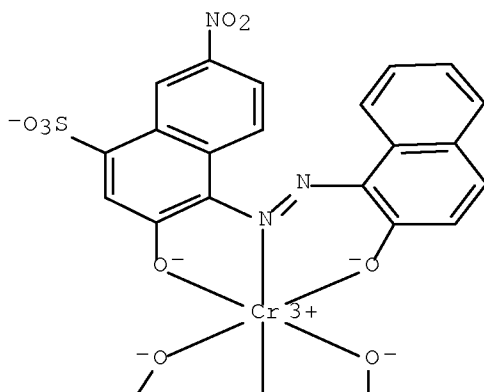
RN 54804-85-2 HCAPLUS

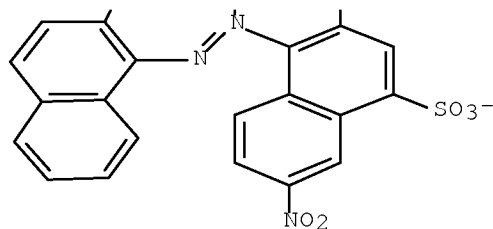
CN 2,7-Naphthalenedisulfonic acid, 4-amino-3-[2-[4'-[2-(2,4-diaminophenyl)diazenyl]-3,3'-dimethyl[1,1'-biphenyl]-4-yl]diazenyl]-5-hydroxy-6-(2-phenyldiazenyl)-, sodium salt (1:2) (CA INDEX NAME)



RN 57693-14-8 HCAPLUS

CN Chromate(3-), bis[3-(hydroxy-κO)-4-[2-[2-(hydroxy-κO)-1-naphthalenyl]diazenyl-κN1]-7-nitro-1-naphthalenesulfonato(3-)]-, sodium (1:3) (CA INDEX NAME)





● 3 Na<sup>+</sup>

CC 45-2 (Industrial Organic Chemicals, Leather, Fats, and Waxes)  
 Section cross-reference(s): 41  
 ST azo dye leather dyeing; color  
 fastness black dye leather  
 IT Leather  
 (azo dyes for, color fastness of)  
 IT Dyes, azo  
 (color fastness of, for dyeing of leather)  
 IT Dyeing  
 (of leather, with azo dyes)  
 IT Molecular structure-property relationship  
 (fastness, color fastness, of azo dyes for  
 dyeing of leather)  
 IT 1064-48-8, C.I. Acid Black 1 1326-83-6, C.I. Solubilized Sulfur  
 Black 1 1787-61-7, C.I. Mordant Black 11 1937-37-7  
 2052-25-7 2538-85-4, C.I. Mordant Black 17  
 2945-96-2, C.I. Direct Black 17 3071-73-6, C.I. Acid  
 Black 24 3564-14-5, C.I. Mordant Black 3 3618-58-4,  
 C.I. Mordant Black 1 3618-60-8, C.I. Mordant Black 7  
 5610-64-0, C.I. Acid Black 52 5979-27-1, C.I. Mordant Black 51  
 6262-07-3, C.I. Acid Black 26 6358-80-1, C.I. Acid Black  
 94 6409-86-5, C.I. Direct Black 97 6428-31-5, C.I.  
 Direct Black 19 6428-38-2, C.I. Direct Black 32  
 6473-13-8, C.I. Direct Black 22 8005-03-6, C.I. Acid Black 2  
 8005-33-2, C.I. Natural Black 1 12217-14-0, C.I. Acid Black 29  
 12217-18-4, C.I. Acid Black 109 12218-96-1, C.I. Acid Black 158  
 12218-97-2, C.I. Acid Black 110 12218-98-3, C.I. Acid Black 113  
 12219-09-9, C.I. Acid Black 155 12224-60-1, C.I. Mordant Black 84  
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 179 61931-02-0, C.I. Acid Black 194 63641-84-9, C.I. Acid Black 190  
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 150428-59-4, C.I. Mordant Black 54 150428-74-3, Leather Black  
 HD

RL: PRP (Properties); TEM (Technical or engineered material use); USES  
(Uses)

(color fastness of, for dyeing of leather)

L31 ANSWER 20 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1993:474525 HCAPLUS Full-text

DOCUMENT NUMBER: 119:74525

ORIGINAL REFERENCE NO.: 119:13417a,13420a

TITLE: **Reactive dye compositions and  
dyeing and printing textiles and  
leather therewith**

INVENTOR(S): Akahori, Kingo; Kashiwane, Yutaka; Harada, Naoki

PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

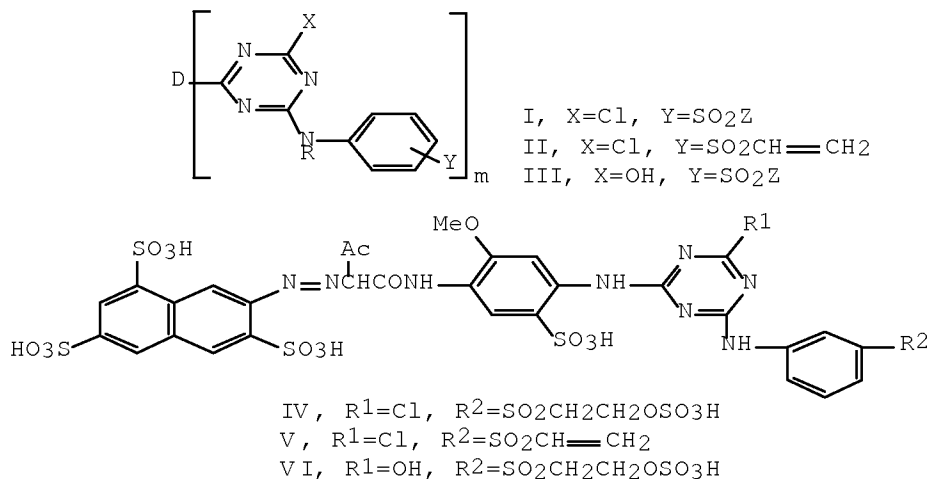
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND   | DATE      | APPLICATION NO. | DATE         |
|------------------------|--------|-----------|-----------------|--------------|
| -----                  | ----   | -----     | -----           | -----        |
| JP 04370157            | A      | 19921222  | JP 1991-147261  | 19910619 <-- |
| PRIORITY APPLN. INFO.: |        |           | JP 1991-147261  | 19910619 <-- |
| OTHER SOURCE(S):       | MARPAT | 119:74525 |                 |              |

GI



AB The title compns. showing good buildup, solubility, storability, and fastness properties comprise I and  $\geq 1$  of II and III in free-acid forms (D = sulfo group-containing azo, metalized azo, anthraquinone, phthalocyanine, formazan, dioxazine dye residue; R = H, Me, Et; Z = vinyl, CH<sub>2</sub>CH<sub>2</sub>Z<sub>1</sub>; Z<sub>1</sub> = alkali-removable group; m = 1, 2; the Y to NR locant relation is similar in I and II) in (II + III):I weight ratio 1-60:100. Cotton was dyed fast yellow with a dye liquor containing IV 100, V 10, and VI 1 parts.

IT 80315-16-8 85946-16-3 85946-20-9

# 11/628659

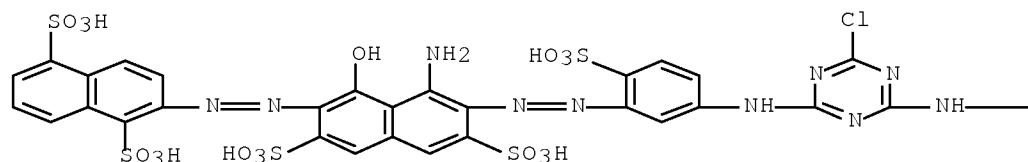
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 107143-06-6 109295-78-5 109295-80-9  
 115662-23-2 131733-83-0 139261-22-6  
 149124-57-2 149124-58-3 149124-59-4  
 149124-60-7 149124-61-8 149124-62-9  
 149124-63-0 149124-64-1 149124-65-2  
 149124-66-3 149124-67-4 149124-68-5  
 149124-69-6 149124-70-9 149124-71-0  
 149124-72-1

RL: USES (Uses)

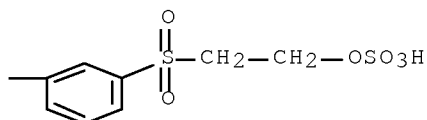
(mixed reactive azo dyes containing, for  
 cotton and leather)

RN 80315-16-8 HCAPLUS

CN 1,5-Naphthalenedisulfonic acid, 2-[2-[8-amino-7-[2-[5-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-sulphophenyl]diazenyl]-1-hydroxy-3,6-disulfo-2-naphthalenyl]diazenyl]- (CA INDEX NAME)

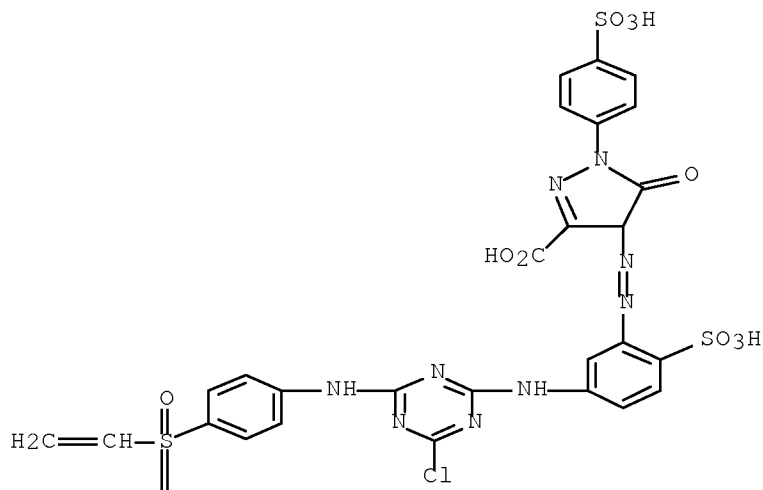


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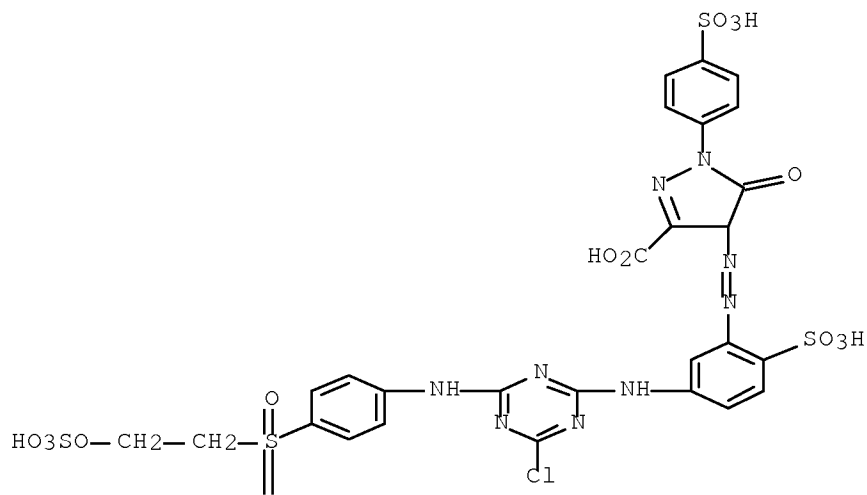


RN 85946-16-3 HCAPLUS

CN 1H-Pyrazole-3-carboxylic acid, 4-[2-[5-[[4-chloro-6-[[4-(ethenylsulfonyl)phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-sulphophenyl]diazenyl]-4,5-dihydro-5-oxo-1-(4-sulphophenyl)- (CA INDEX NAME)

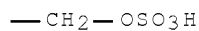
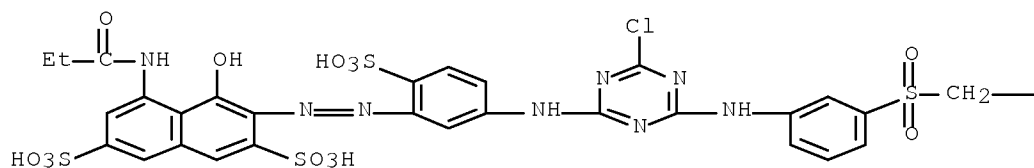


RN 85946-20-9 HCAPLUS  
 CN 1H-Pyrazole-3-carboxylic acid, 4-[2-[5-[[4-chloro-6-[[4-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-sulfophenyl]diazeryl]-4,5-dihydro-5-oxo-1-(4-sulfophenyl)- (CA INDEX NAME)

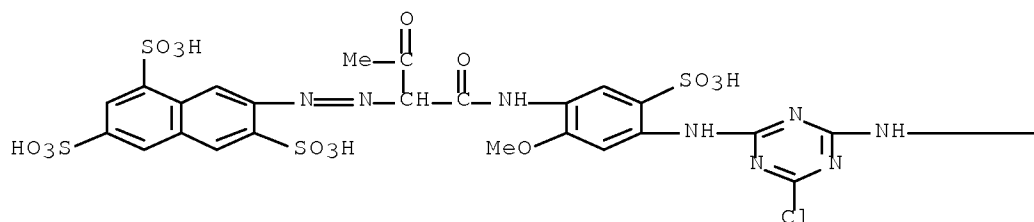




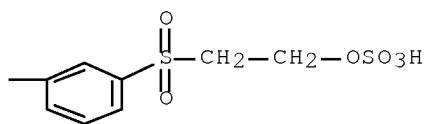
RN 104256-91-9 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid, 3-[2-[5-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-sulfophenyl]diazenyl]-4-hydroxy-5-[(1-oxopropyl)amino]- (CA INDEX NAME)



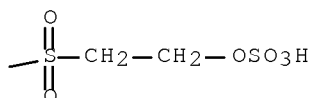
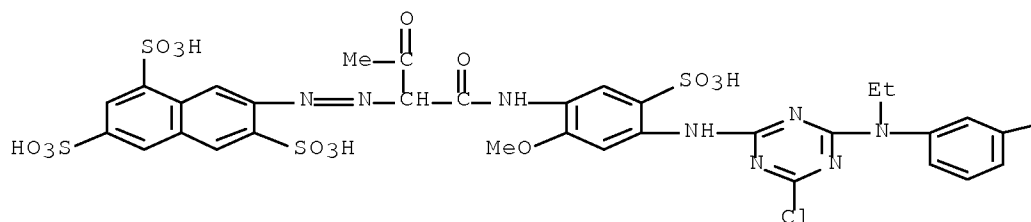
RN 105936-66-1 HCAPLUS  
 CN 1,3,6-Naphthalenetrisulfonic acid,  
 7-[2-[1-[[[4-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-methoxy-5-sulfophenyl]amino]carbonyl]-2-oxopropyl]diazenyl]- (CA INDEX NAME)



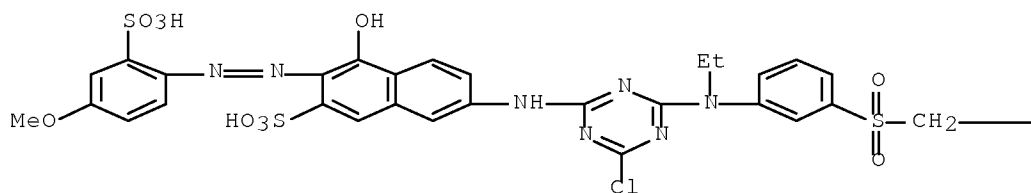


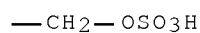


RN 105956-68-1 HCAPLUS  
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 7-[2-[1-[[[4-[[4-chloro-6-[ethyl[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-methoxy-5-sulphophenyl]amino]carbonyl]-2-oxopropyl]diazenyl]- (CA INDEX NAME)

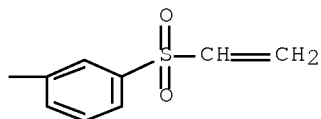
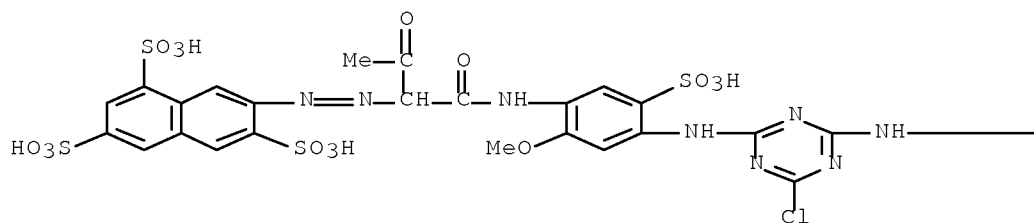


RN 107143-06-6 HCAPLUS  
 CN 2-Naphthalenesulfonic acid, 7-[[4-chloro-6-[ethyl[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-4-hydroxy-3-[2-(4-methoxy-2-sulphophenyl)diazenyl]- (CA INDEX NAME)

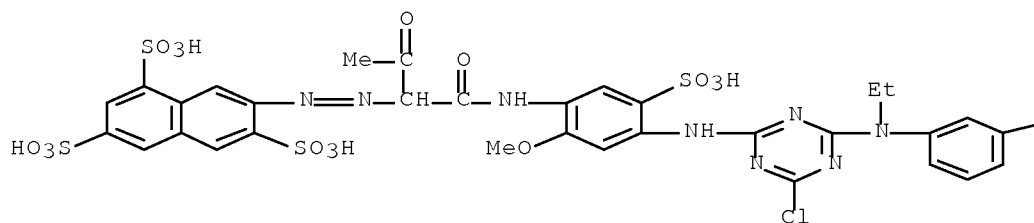


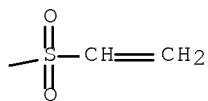


RN 109295-78-5 HCAPLUS  
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 7-[2-[1-[[[4-[[4-chloro-6-[[3-(ethenylsulfonyl)phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-methoxy-5-sulfo-phenyl]amino]carbonyl]-2-oxopropyl]diazenyl]-  
 (CA INDEX NAME)



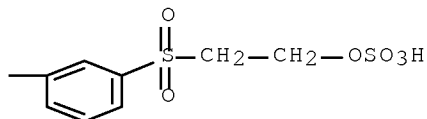
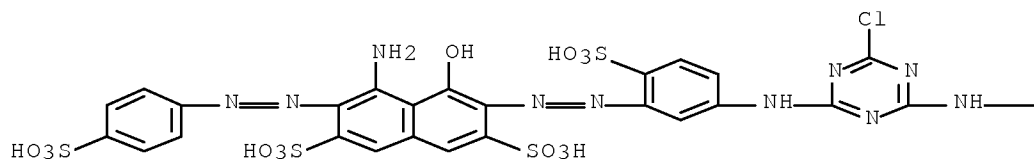
RN 109295-80-9 HCAPLUS  
 CN 1,3,6-Naphthalenetrisulfonic acid,  
 7-[2-[1-[[[4-[[4-chloro-6-[[3-(ethenylsulfonyl)phenyl]ethylamino]-1,3,5-triazin-2-yl]amino]-2-methoxy-5-sulfo-phenyl]amino]carbonyl]-2-oxopropyl]diazenyl]-  
 (CA INDEX NAME)





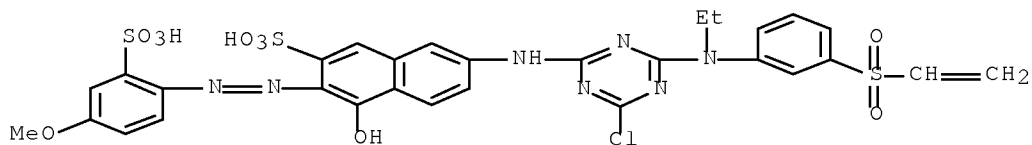
RN 115662-23-2 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[5-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-sulfophenyl]diazenyl]-5-hydroxy-3-[2-(4-sulfophenyl)diazenyl]- (CA INDEX NAME)



RN 131733-83-0 HCAPLUS

CN 2-Naphthalenesulfonic acid, 7-[[4-chloro-6-[[3-(ethenylsulfonyl)phenyl]ethylamino]-1,3,5-triazin-2-yl]amino]-4-hydroxy-3-[2-(4-methoxy-2-sulfophenyl)diazenyl]- (CA INDEX NAME)

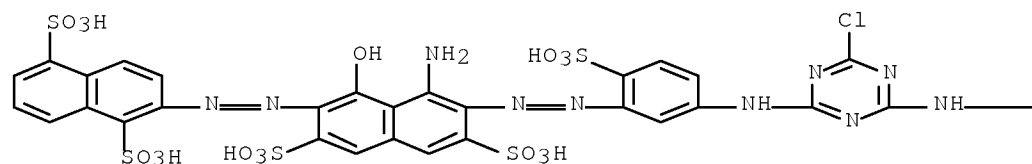


RN 139261-22-6 HCAPLUS

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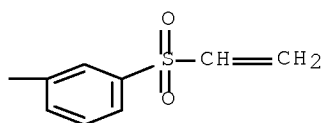
11/628659

(ethenylsulfonyl)phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-sulfo-  
phenyl]diazenyl]-1-hydroxy-3,6-disulfo-2-naphthalenyl]diazenyl]- (CA  
INDEX NAME)

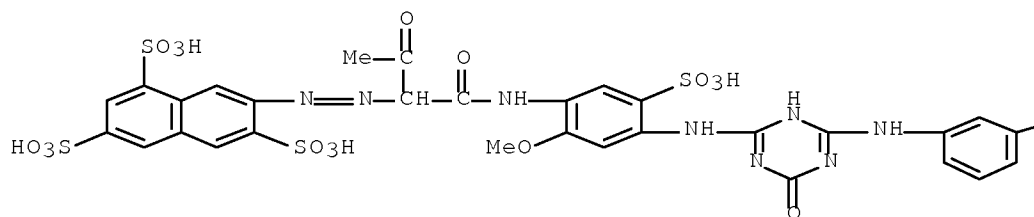


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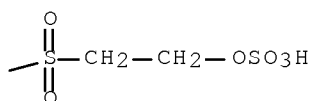


RN 149124-57-2 HCAPLUS  
CN 1,3,6-Naphthalenetrisulfonic acid,  
7-[2-[1-[[[4-[3,4-dihydro-4-oxo-6-[[3-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-methoxy-5-sulfo-phenyl]amino]carbonyl]-2-oxopropyl]diazenyl]- (CA INDEX NAME)



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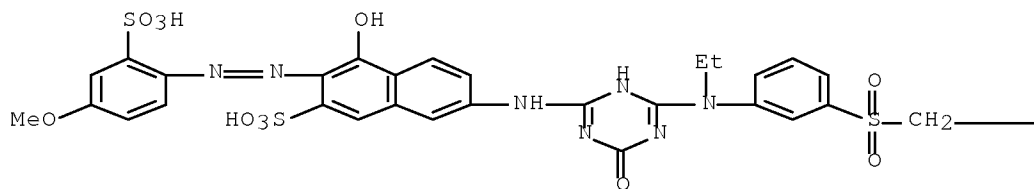


RN 149124-58-3 HCAPLUS

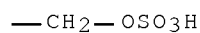
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CN 2-Naphthalenesulfonic acid, 7-[[6-[ethyl[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,4-dihydro-4-oxo-1,3,5-triazin-2-yl]amino]-4-hydroxy-3-[(4-methoxy-2-sulfophenyl)azo]- (9CI) (CA INDEX NAME)

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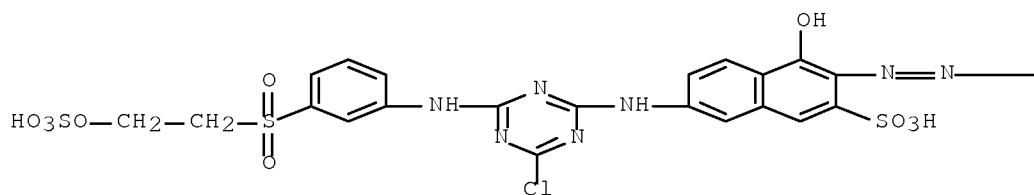
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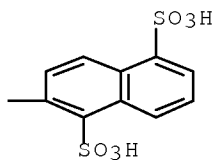
RN 149124-59-4 HCAPLUS

CN 1,5-Naphthalenedisulfonic acid, 2-[2-[6-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-1-hydroxy-3-sulfo-2-naphthalenyl]diazenyl]- (CA INDEX NAME)

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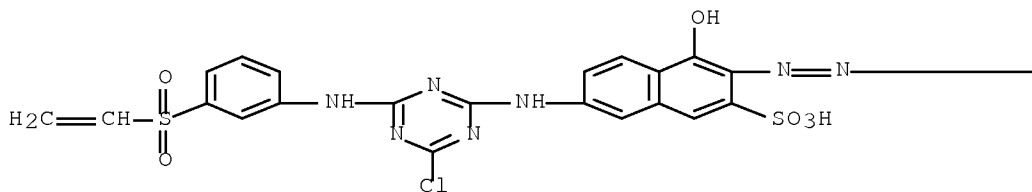
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CN 1,5-Naphthalenedisulfonic acid, 2-[2-[6-[[4-chloro-6-[[3-

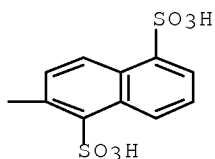
11/628659

(ethenylsulfonyl)phenyl]amino]-1,3,5-triazin-2-yl]amino]-1-hydroxy-3-sulfo-2-naphthalenyl]diazenyl]- (CA INDEX NAME)

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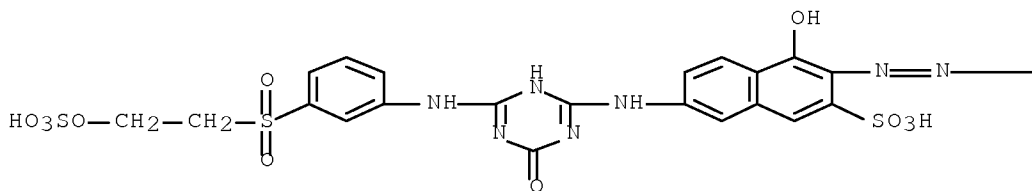
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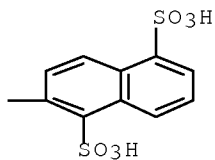
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CN 1,5-Naphthalenedisulfonic acid, 2-[2-[6-[[5,6-dihydro-6-oxo-4-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-1-hydroxy-3-sulfo-2-naphthalenyl]diazenyl]- (CA INDEX NAME)

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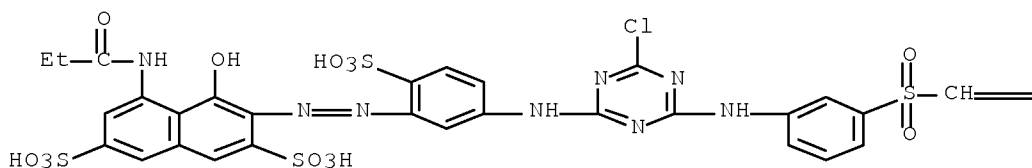
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CN 2,7-Naphthalenedisulfonic acid, 3-[2-[5-[[4-chloro-6-[[3-

11/628659

(ethenylsulfonyl)phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-sulfophenyl]diazenyl]-4-hydroxy-5-[(1-oxopropyl)amino]- (CA INDEX NAME)

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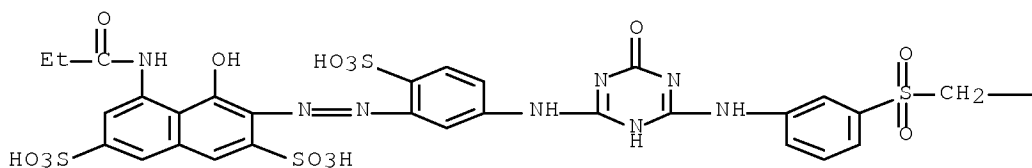


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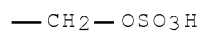


RN 149124-63-0 HCAPLUS  
CN 2,7-Naphthalenedisulfonic acid, 3-[2-[5-[[5,6-dihydro-6-oxo-4-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-sulfophenyl]diazenyl]-4-hydroxy-5-[(1-oxopropyl)amino]- (CA INDEX NAME)

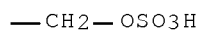
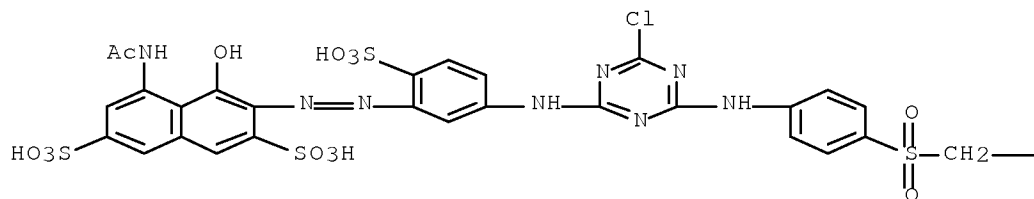
PAGE 1-A



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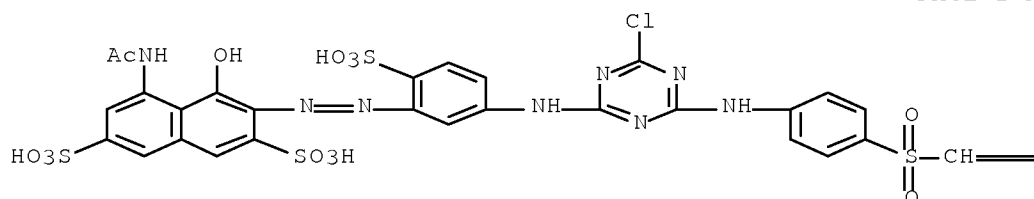


RN 149124-64-1 HCAPLUS  
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RN 149124-65-2 HCAPLUS

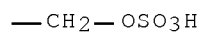
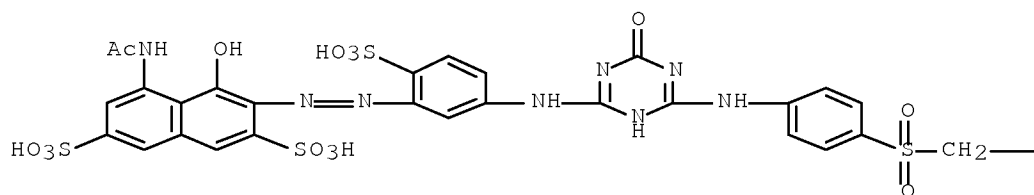
CN 2,7-Naphthalenedisulfonic acid, 5-(acetylamino)-3-[2-[5-[[4-chloro-6-[[4-(ethenylsulfonyl)phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-sulphophenyl]diazenyl]-4-hydroxy- (CA INDEX NAME)



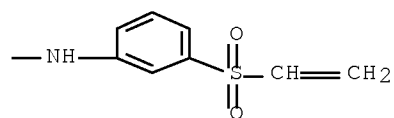
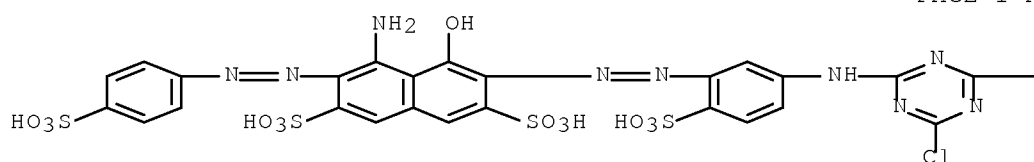
RN 149124-66-3 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 5-(acetylamino)-3-[2-[5-[[3,4-dihydro-4-oxo-6-[[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-sulphophenyl]diazenyl]-4-hydroxy- (CA INDEX NAME)

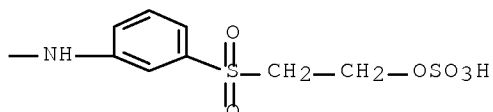
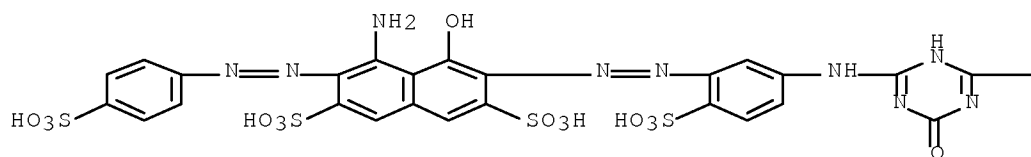




RN 149124-67-4 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[5-[[4-chloro-6-[[3-(ethenylsulfonyl)phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-sulfophenyl]diazenyl]-5-hydroxy-3-[2-(4-sulfophenyl)diazenyl]- (CA INDEX NAME)

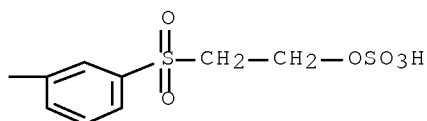
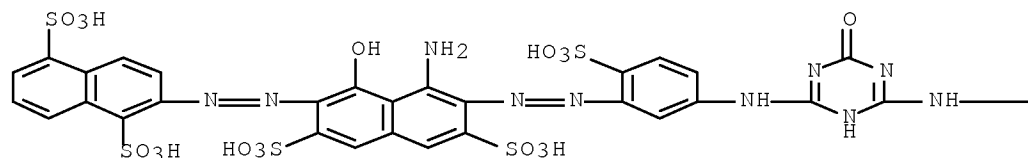


RN 149124-68-5 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[5-[[5,6-dihydro-6-oxo-4-[[3-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-sulfophenyl]diazenyl]-5-hydroxy-3-[2-(4-sulfophenyl)diazenyl]- (CA INDEX NAME)



RN 149124-69-6 HCAPLUS

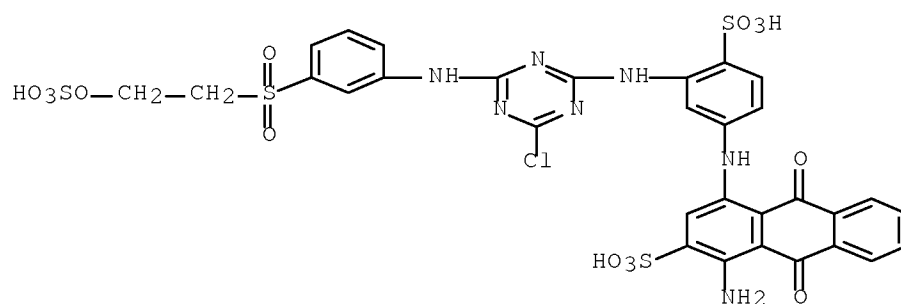
CN 1,5-Naphthalenedisulfonic acid, 2-[2-[8-amino-7-[2-[5-[[5,6-dihydro-6-oxo-4-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-sulphophenyl]diazenyl]-1-hydroxy-3,6-disulfo-2-naphthalenyl]diazenyl]-  
(CA INDEX NAME)



RN 149124-70-9 HCAPLUS

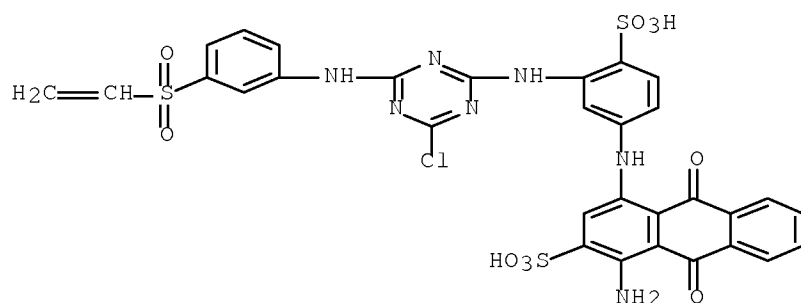
CN 2-Anthracenesulfonic acid, 1-amino-4-[[3-[[4-chloro-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-4-sulphophenyl]amino]-9,10-dihydro-9,10-dioxo- (CA INDEX NAME)

11/628659



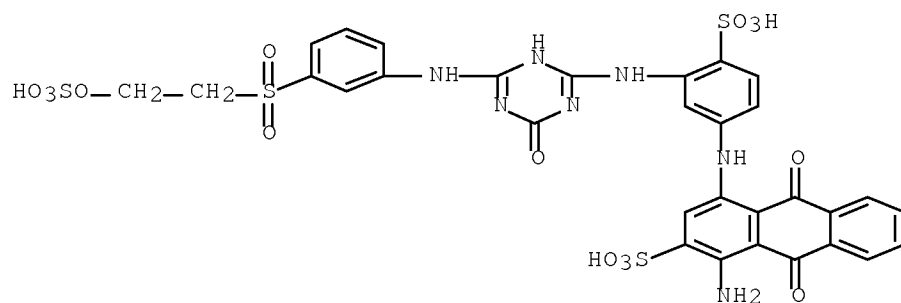
RN 149124-71-0 HCAPLUS

CN 2-Anthracenesulfonic acid, 1-amino-4-[[3-[[4-chloro-6-[[3-(ethenylsulfonyl)phenyl]amino]-1,3,5-triazin-2-yl]amino]-4-sulfophenyl]amino]-9,10-dihydro-9,10-dioxo- (CA INDEX NAME)



RN 149124-72-1 HCAPLUS

CN 2-Anthracenesulfonic acid, 1-amino-4-[[3-[[3,4-dihydro-4-oxo-6-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-4-sulfophenyl]amino]-9,10-dihydro-9,10-dioxo- (CA INDEX NAME)



IC ICM C09B062-503

ICS C09B062-505; C09B062-51; C09B062-513; C09B062-515; C09B062-517;  
C09B067-22; D06P001-384

CC 40-6 (Textiles and Fibers)

Section cross-reference(s): 41, 45

ST reactive azo dye mixt cotton;  
leather reactive azo dye mixt

IT leather  
(mixed reactive azo dyes for)

IT Textile printing  
(of cotton, mixed reactive azo dyes for)

IT Printing, nonimpact  
(of leather, mixed reactive azo  
dyes for)

IT Dyes, reactive  
(azo, mixed, for dyeing and printing of cotton and  
leather)

IT 80315-16-8 85946-16-3 85946-20-9  
104256-91-9 105936-66-1 105956-68-1  
107143-06-6 109295-78-5 109295-80-9  
115662-23-2 131733-83-0 139261-22-6  
149124-57-2 149124-58-3 149124-59-4  
149124-60-7 149124-61-8 149124-62-9  
149124-63-0 149124-64-1 149124-65-2  
149124-66-3 149124-67-4 149124-68-5  
149124-69-6 149124-70-9 149124-71-0  
149124-72-1

RL: USES (Uses)  
(mixed reactive azo dyes containing, for  
cotton and leather)

L31 ANSWER 21 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1992:22868 HCAPLUS Full-text

DOCUMENT NUMBER: 116:22868

ORIGINAL REFERENCE NO.: 116:3999a,4002a

TITLE: Reactive disazo dyes, their  
manufacture and use, and fabrics dyed with them

INVENTOR(S): Gisler, Markus

PATENT ASSIGNEE(S): Sandoz-Patent-G.m.b.H., Germany

SOURCE: Ger. Offen., 15 pp.

CODEN: GWXXBX

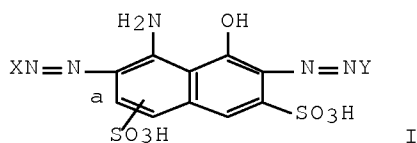
DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

| PATENT NO.             | KIND   | DATE      | APPLICATION NO. | DATE            |
|------------------------|--------|-----------|-----------------|-----------------|
| -----                  | ----   | -----     | -----           | -----           |
| DE 4039864             | A1     | 19910620  | DE 1990-4039864 | 19901213 <--    |
| FR 2655995             | A1     | 19910621  | FR 1990-15548   | 19901210 <--    |
| ES 2027868             | A6     | 19920616  | ES 1990-3192    | 19901213 <--    |
| JP 04209659            | A      | 19920731  | JP 1990-419205  | 19901214 <--    |
| CH 680796              | A5     | 19921113  | CH 1990-3967    | 19901214 <--    |
| BR 9100449             | A      | 19920922  | BR 1991-449     | 19910205 <--    |
| US 5597903             | A      | 19970128  | US 1995-470669  | 19950606 <--    |
| PRIORITY APPLN. INFO.: |        |           | DE 1989-3941639 | A1 19891216 <-- |
|                        |        |           | US 1990-627292  | B1 19901214 <-- |
|                        |        |           | US 1992-909558  | B1 19920706 <-- |
| OTHER SOURCE(S):       | MARPAT | 116:22868 |                 |                 |
| GI                     |        |           |                 |                 |



AB Disazo dyes I (X, Y = substituted benzene or naphthalene diazo component residue,  $\geq 1$  of which contains a  $\text{SO}_2\text{CH}_2\text{CH}_2$  group or precursor; Y contains a dichlorocyanopyrimidinylamino group) and their salts have good fastness properties on leather and natural and synthetic cellulosic and polyamide fibers. Thus, 4-aminophenyl 2-sulfatoethyl sulfone was diazotized and coupled with 1-amino-8-hydroxynaphthalene-3,6-disulfonic acid to give a monoazo intermediate (II). 2,4-Diaminobenzenesulfonic acid was condensed with 5-cyano-2,4,6-trichloropyrimidine and the condensate was diazotized and coupled with II to give I [sulfo group in position a; X = 4-(sulfatoethylsulfonyl)phenyl; Y = 5-(5-cyanodichloropyrimidinylamino)-2-sulfophenyl], which provided deep navy blue shades on cotton which were fast to light, moisture, and oxidation

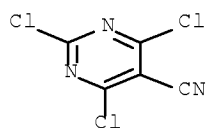
IT 3029-64-9

RL: USES (Uses)

(condensation of, with diaminobenzenesulfonic acid)

RN 3029-64-9 HCAPLUS

CN 5-Pyrimidinecarbonitrile, 2,4,6-trichloro- (CA INDEX NAME)



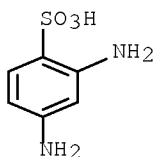
IT 88-63-1, 2,4-Diaminobenzenesulfonic acid

RL: USES (Uses)

(condensation of, with trichlorocyanopyrimidine)

RN 88-63-1 HCAPLUS

CN Benzenesulfonic acid, 2,4-diamino- (CA INDEX NAME)



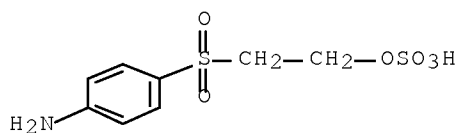
IT 2494-89-5, 4-Aminophenyl 2-sulfatoethyl sulfone

RL: USES (Uses)

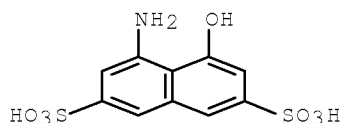
(coupling of diazotized, with aminohydroxynaphthalenedisulfonic acid)

RN 2494-89-5 HCAPLUS

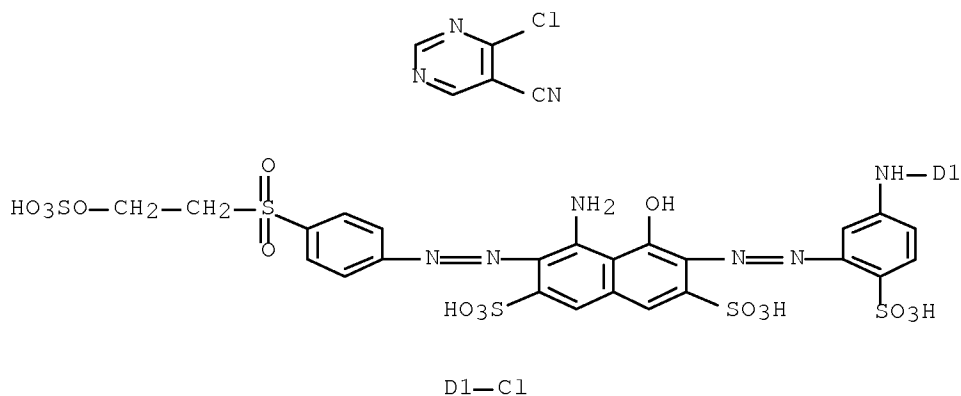
CN Ethanol, 2-[(4-aminophenyl)sulfonyl]-, 1-(hydrogen sulfate) (CA INDEX NAME)



IT 90-20-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (coupling of, with diazotized aminophenyl sulfatoethyl sulfone)  
 RN 90-20-0 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy- (CA INDEX NAME)



IT 138081-66-0P  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (preparation of, as navy blue dye for cotton)  
 RN 138081-66-0 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[[5-[[2,6(or 4,6)-dichloro-5-cyano-4(or 2)-pyrimidinyl]amino]-2-sulfophenyl]azo]-5-hydroxy-3-[[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo]- (9CI) (CA INDEX NAME)



IC ICM C09B062-01  
 ICS C09B062-25; C09B067-22; D06P001-38; D06P003-10; D06P003-66;  
 D06P003-32  
 ICA C09B062-513; C09B062-533; C09B033-10; C09D011-02  
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic

Sensitizers)  
 Section cross-reference(s): 40, 45  
 ST disazo reactive dye cotton;  
 dichlorocyanopyrimidinylamino group reactive dye  
 IT Dyeing  
 Textile printing  
 (of cotton, with reactive disazo dyes)  
 IT Leather  
 (reactive disazo dyes for, with  
 dichlorocyanopyrimidinylamino groups)  
 IT Polyamide fibers, miscellaneous  
 RL: MSC (Miscellaneous)  
 (reactive disazo dyes for, with  
 dichlorocyanopyrimidinylamino groups)  
 IT Dyes, reactive  
 (azo, disazo, with dichlorocyanopyrimidinylamino groups, for  
 leather and cellulosic and polyamide fibers)  
 IT 3029-64-9  
 RL: USES (Uses)  
 (condensation of, with diaminobenzenesulfonic acid)  
 IT 88-63-1, 2,4-Diaminobenzenesulfonic acid  
 RL: USES (Uses)  
 (condensation of, with trichlorocyanopyrimidine)  
 IT 2494-89-5, 4-Aminophenyl 2-sulfatoethyl sulfone  
 RL: USES (Uses)  
 (coupling of diazotized, with aminohydroxynaphthalenedisulfonic acid)  
 IT 90-20-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (coupling of, with diazotized aminophenyl sulfatoethyl sulfone)  
 IT 138081-66-0P  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (preparation of, as navy blue dye for cotton)

L31 ANSWER 22 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 1991:538207 HCAPLUS Full-text  
 DOCUMENT NUMBER: 115:138207  
 ORIGINAL REFERENCE NO.: 115:23695a,23698a  
 TITLE: Bifunctional reactive copper formazan  
 dyes, their preparation and use  
 INVENTOR(S): Lehmann, Urs; Koller, Josef  
 PATENT ASSIGNEE(S): Ciba-Geigy A.-G., Switz.  
 SOURCE: Eur. Pat. Appl., 31 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.                        | KIND   | DATE       | APPLICATION NO. | DATE           |
|-----------------------------------|--------|------------|-----------------|----------------|
| -----                             | ----   | -----      | -----           | -----          |
| EP 410930                         | A2     | 19910130   | EP 1990-810546  | 19900717 <--   |
| EP 410930                         | A3     | 19910206   |                 |                |
| EP 410930                         | B1     | 19950419   |                 |                |
| R: BE, CH, DE, ES, FR, GB, IT, LI |        |            |                 |                |
| ES 2071076                        | T3     | 19950616   | ES 1990-810546  | 19900717 <--   |
| US 5112958                        | A      | 19920512   | US 1990-555335  | 19900719 <--   |
| JP 03059079                       | A      | 19910314   | JP 1990-194107  | 19900724 <--   |
| PRIORITY APPLN. INFO.:            |        |            | CH 1989-2761    | A 19890724 <-- |
| OTHER SOURCE(S):                  | MARPAT | 115:138207 |                 |                |
| GI                                |        |            |                 |                |

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Blue dyes I (R = Cl-4 alkyl, Cl-4 alkoxy, halogen, CN, NO<sub>2</sub>; X = F, Cl; Y = CH<sub>2</sub>CH<sub>2</sub>Cl, CH:CH<sub>2</sub>; n = 0-2), useful for dyeing or printing of paper, leather, or textiles containing N or OH groups, also useful in the trichromic dyeing of textiles, are prepared Thus, the Cu formazan chromophore II was dissolved in water, condensed with cyanuric chloride, and the condensate condensed with 4-(2-chloroethylsulfonyl)aniline, forming the tri-Na salt of I (Y = CH<sub>2</sub>CH<sub>2</sub>Cl-4, X = Cl, n = 0, sulfo group in 4 position), which dyed wool in fast blue shades.

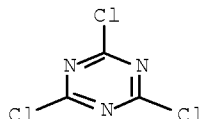
IT 108-77-0, Cyanuric chloride 675-14-9, Cyanuric fluoride

RL: USES (Uses)

(condensation of, with amines in reactive dye manufacture)

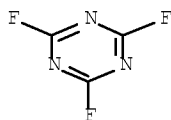
RN 108-77-0 HCAPLUS

CN 1,3,5-Triazine, 2,4,6-trichloro- (CA INDEX NAME)



RN 675-14-9 HCAPLUS

CN 1,3,5-Triazine, 2,4,6-trifluoro- (CA INDEX NAME)



IT 60265-89-6 77743-24-9

RL: RCT (Reactant); RACT (Reactant or reagent)

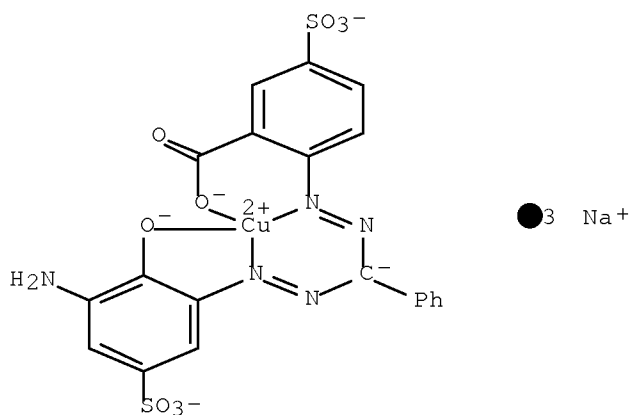
(condensation of, with cyanuric chloride)

RN 60265-89-6 HCAPLUS

CN Cuprate(3-), [2-[[[(3-amino-2-(hydroxy-κO)-5-sulfophenyl)azo-κN2]phenylmethyl]azo-κN1]-5-sulfobenzoato(5-)-κO]-, trisodium (9CI) (CA INDEX NAME)

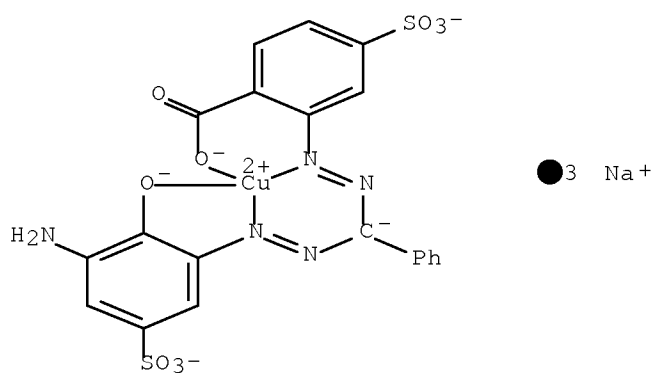


11/628659



RN 77743-24-9 HCAPLUS

CN Cuprate(3-), [2-[[[3-amino-2-(hydroxy-κO)-5-sulfohenyl]azo-κN2]phenylmethyl]azo-κN1]-4-sulfohenzoato(5-)-κO]-, trisodium (9CI) (CA INDEX NAME)



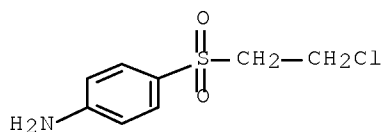
IT 20171-19-1 20171-20-4

RL: USES (Uses)

(condensation of, with halotriazines, in reactive formazan dye manufacture)

RN 20171-19-1 HCAPLUS

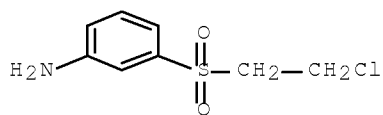
CN Benzenamine, 4-[(2-chloroethyl)sulfonyl]- (CA INDEX NAME)



RN 20171-20-4 HCAPLUS

11/628659

CN Benzenamine, 3-[(2-chloroethyl)sulfonyl]- (CA INDEX NAME)



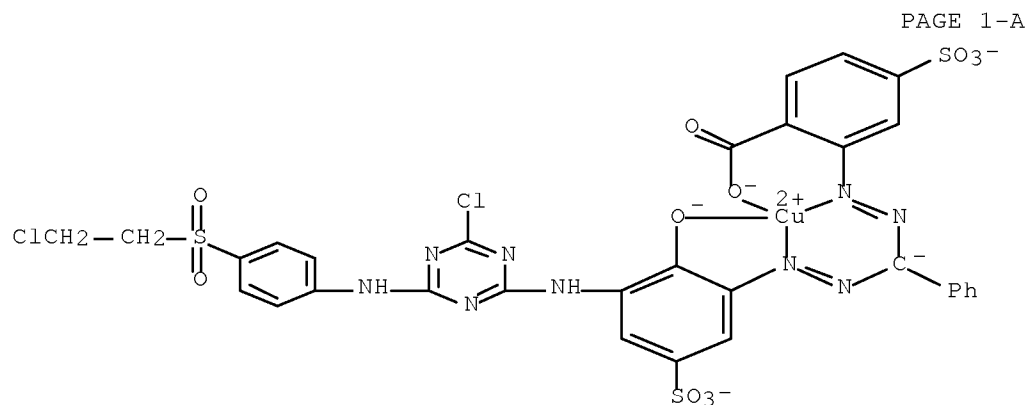
IT 135162-58-2P 135162-60-6P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(manufacture and dehydrochlorination of, as blue dye for wool)

RN 135162-58-2 HCAPLUS

CN Cuprate(3-), [2-[[[3-[[4-chloro-6-[[4-[(2-chloroethyl)sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-hydroxy-5-sulfophenyl]azo]phenylmethyl]azo]-4-sulfobenzoato(5-)]-, trisodium (9CI) (CA INDEX NAME)

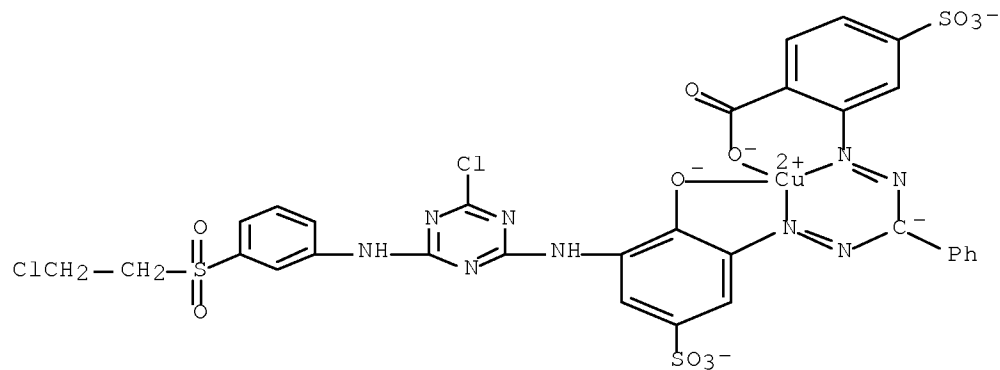


PAGE 2-A

● 3 Na<sup>+</sup>

RN 135162-60-6 HCAPLUS

CN Cuprate(3-), [2-[[[3-[[4-chloro-5-[[3-[(2-chloroethyl)sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-hydroxy-5-sulfophenyl]azo]phenylmethyl]azo]-4-sulfobenzoato(5-)]-, trisodium (9CI) (CA INDEX NAME)

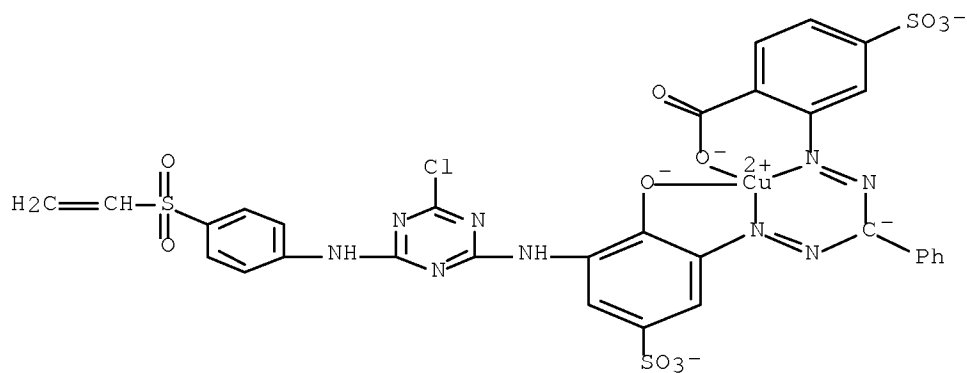


IT 135162-59-3P 135162-61-7P 135162-62-8P  
 135162-63-9P 135162-64-0P 135162-65-1P  
 136074-14-1P

RL: PREP (Preparation)  
 (manufacture of, as blue dye for wool)

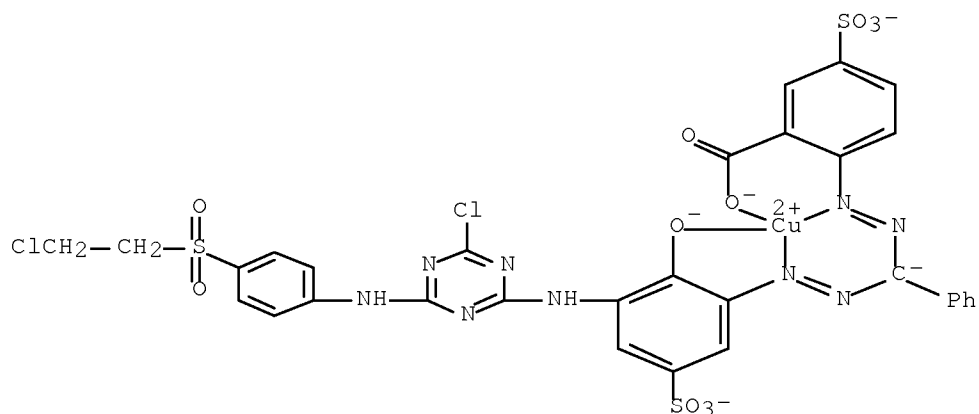
RN 135162-59-3 HCAPLUS

CN Cuprate(3-), [2-[[[3-[[4-chloro-6-[[4-(ethenylsulfonyl)phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-hydroxy-5-sulfophenyl]azo]phenylmethyl]azo]-4-sulfobenzoato(5-)]-, trisodium (9CI) (CA INDEX NAME)



RN 135162-61-7 HCAPLUS  
 CN Cuprate(3-), [2-[[[3-[[4-chloro-5-[[4-(2-chloroethyl)sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-hydroxy-5-sulfo-phenyl]azo]phenylmethyl]azo]-5-sulfobenzoato(5-)]-, trisodium (9CI)  
 (CA INDEX NAME)

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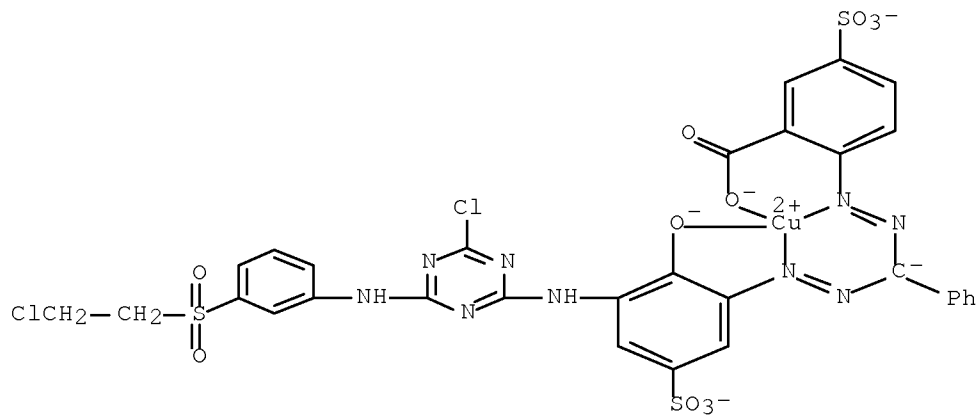


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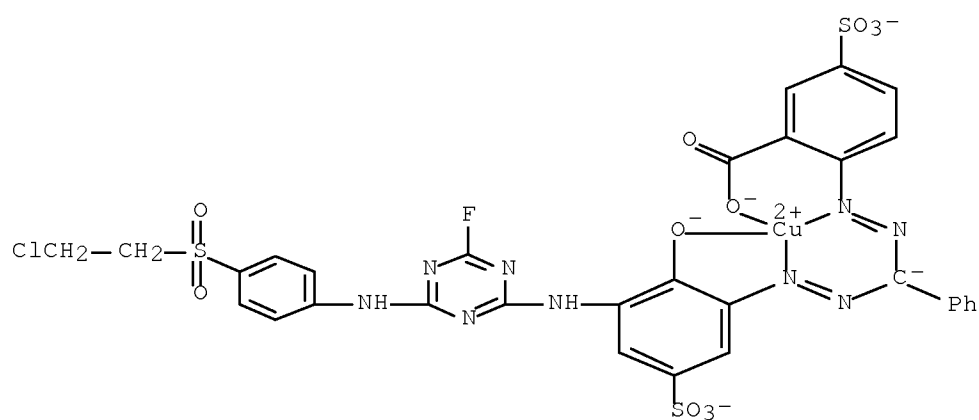
RN 135162-62-8 HCAPLUS  
 CN Cuprate(3-), [2-[[[3-[[4-chloro-6-[3-[(2-chloroethyl)sulfonyl]phenyl]-1,3,5-triazin-2-yl]amino]-2-hydroxy-5-sulfo-phenyl]azo]phenylmethyl]azo]-5-sulfobenzoato(5-)]-, trisodium (9CI) (CA INDEX NAME)

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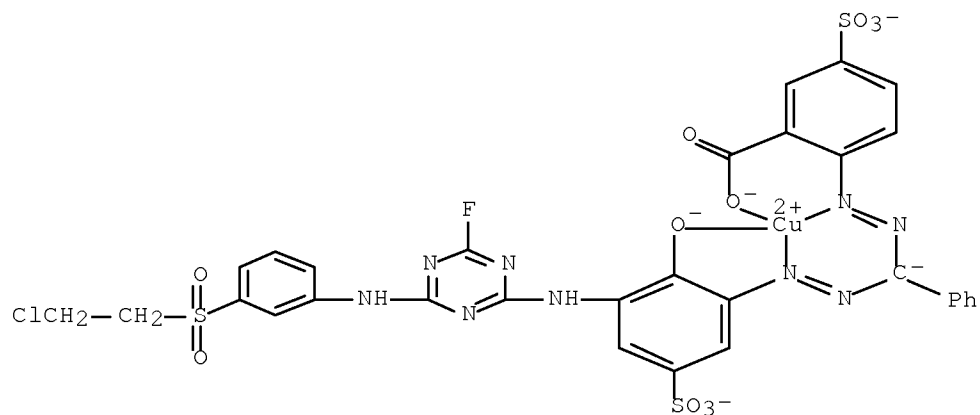


RN 135162-63-9 HCAPLUS  
 CN Cuprate(3-), [2-[[[[3-[[4-[[4-(2-chloroethyl)sulfonyl]phenyl]amino]-6-fluoro-1,3,5-triazin-2-yl]amino]-2-hydroxy-5-sulfophenyl]azo]phenylmethyl]azo]-5-sulfobenzoato(5-)]-, trisodium (9CI)  
 (CA INDEX NAME)

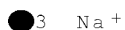


RN 135162-64-0 HCAPLUS  
 CN Cuprate(3-), [2-[[[[3-[[4-fluoro-6-[[3-(2-chloroethyl)sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-hydroxy-4-sulfophenyl]azo]phenylmethyl]azo]-5-sulfobenzoato(5-)]-, trisodium (9CI)  
 (CA INDEX NAME)

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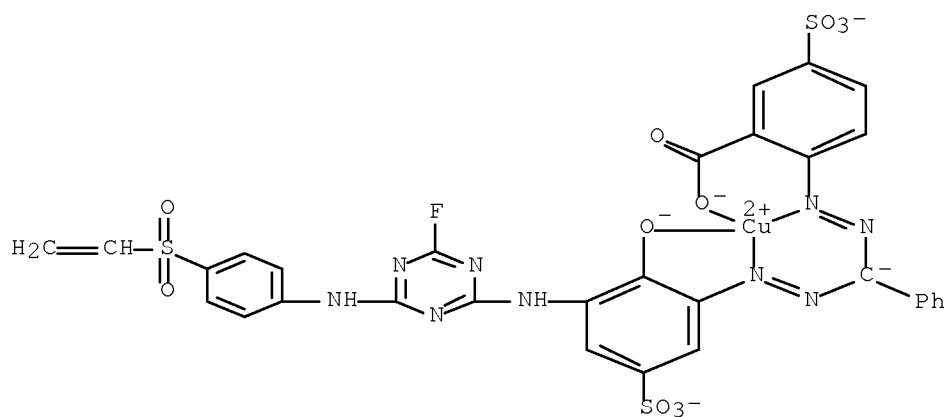
PAGE 2-A



RN 135162-65-1 HCAPLUS

CN Cuprate(3-), [2-[[[3-[6-[4-(ethenylsulfonyl)phenyl]amino]-4-fluoro-1,3,5-triazin-2-yl]amino]-2-hydroxy-4-sulfophenyl]azo]phenylmethyl]azo]-5-sulfobenzoato(5-)]-, trisodium (9CI) (CA INDEX NAME)

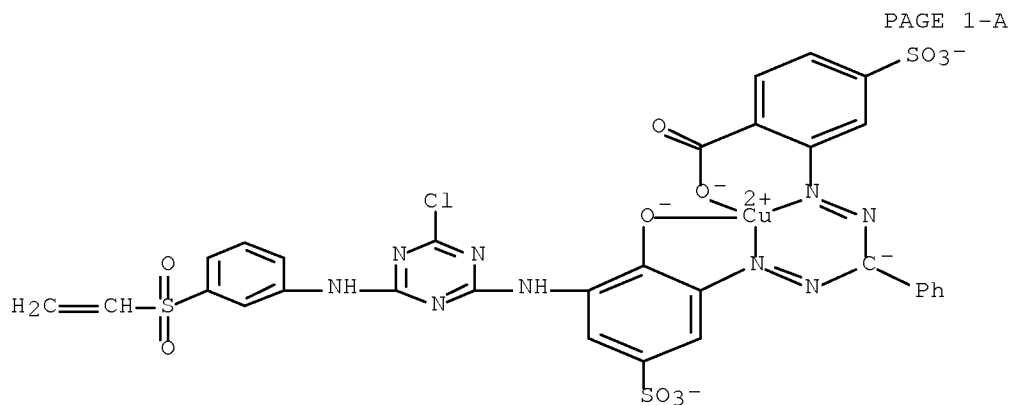
PAGE 1-A



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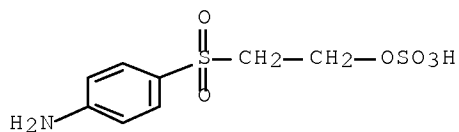
RN 136074-14-1 HCAPLUS  
 CN Cuprate(3-), [2-[[[3-[[4-chloro-6-[[3-(ethenylsulfonyl)phenyl]amino]-1,3,5-triazin-2-yl]amino]-2-hydroxy-5-sulphophenyl]azo]phenylmethyl]azo]-4-sulphobenzoato(5-)]-, trisodium (9CI) (CA INDEX NAME)



PAGE 2-A

● 3 Na<sup>+</sup>

IT 2494-89-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with cyanuric fluoride, in reactive formazan dye manufacture)  
 RN 2494-89-5 HCAPLUS  
 CN Ethanol, 2-[(4-aminophenyl)sulfonyl]-, 1-(hydrogen sulfate) (CA INDEX NAME)



IC ICM C09B062-503  
 ICS D06P003-10; D06P001-384  
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
 Section cross-reference(s): 40, 43, 45  
 ST bifunctional reactive copper formazan dye; wool dyeing copper formazan dye; paper dyeing copper formazan dye; leather dyeing copper formazan dye; textile printing copper formazan dye  
 IT Leather  
 Paper

(dyes for, bifunctional reactive blue copper formazan compds. as, manufacture of)

- IT Dyes, reactive  
(bifunctional, copper formazans, manufacture of blue, for paper and leather and nitrogen- or hydroxyl group-containing fibers)
- IT 108-77-0, Cyanuric chloride 675-14-9, Cyanuric fluoride  
RL: USES (Uses)  
(condensation of, with amines in reactive dye manufacture)
- IT 60265-89-6 77743-24-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(condensation of, with cyanuric chloride)
- IT 20171-19-1 20171-20-4  
RL: USES (Uses)  
(condensation of, with halotriazines, in reactive formazan dye manufacture)
- IT 135162-58-2P 135162-60-6P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(manufacture and dehydrochlorination of, as blue dye for wool)
- IT 135162-59-3P 135162-61-7P 135162-62-8P  
135162-63-9P 135162-64-0P 135162-65-1P  
136074-14-1P  
RL: PREP (Preparation)  
(manufacture of, as blue dye for wool)
- IT 2494-89-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with cyanuric fluoride, in reactive formazan dye manufacture)

L31 ANSWER 23 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1985:97269 HCAPLUS Full-text

DOCUMENT NUMBER: 102:97269

ORIGINAL REFERENCE NO.: 102:15295a,15298a

TITLE: Use of reactive dyes for dyeing of pigskin

AUTHOR(S): Shao, Yun; Zhao, Shimin

CORPORATE SOURCE: Teach. Res. Lab. Dyeing, East China Inst. Text. Eng., Shanghai, Peop. Rep. China

SOURCE: Pige Keji (1984), (7), 11-16  
CODEN: PKKCDO; ISSN: 0253-3642

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB Reactive dyes imparted better fastness to wet rubbing in the dyeing of pigskins, compared with acid dyes. For chrome-tanned pigskins, dyeing temps. were controlled at 70-80°. For vinyl sulfone-type dyes, good results were obtained by dyeing 45 min at pH 4.5 and fixing 45 min at pH 6.5.

IT 2580-78-1 13324-20-4 70209-99-3  
70416-86-3

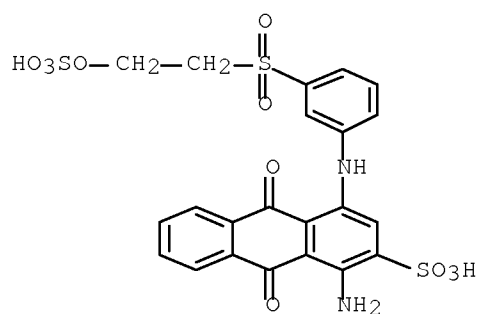
RL: USES (Uses)  
(dyeing by, of chrome-tanned pigskin)

RN 2580-78-1 HCAPLUS

CN 2-Anthracenesulfonic acid, 1-amino-9,10-dihydro-9,10-dioxo-4-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-, sodium salt (1:2) (CA INDEX NAME)



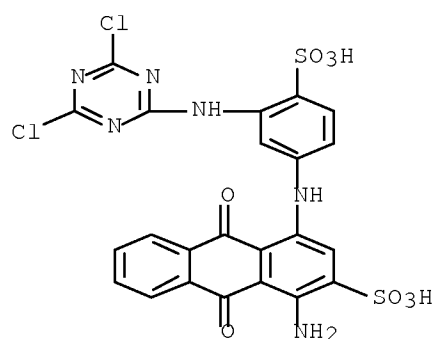
11/628659



●2 Na

RN 13324-20-4 HCAPLUS

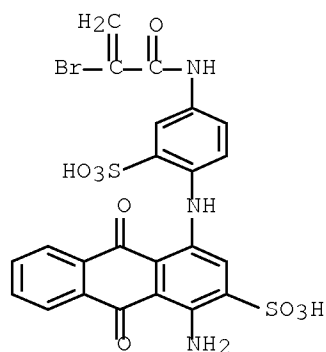
CN 2-Anthracenesulfonic acid, 1-amino-4-[[3-[(4,6-dichloro-1,3,5-triazin-2-yl)amino]-4-sulfonylphenyl]amino]-9,10-dihydro-9,10-dioxo- (CA INDEX NAME)



RN 70209-99-3 HCAPLUS

CN 2-Anthracenesulfonic acid, 1-amino-4-[[4-[(2-bromo-1-oxo-2-propen-1-yl)amino]-2-sulfonylphenyl]amino]-9,10-dihydro-9,10-dioxo-, sodium salt (1:2) (CA INDEX NAME)

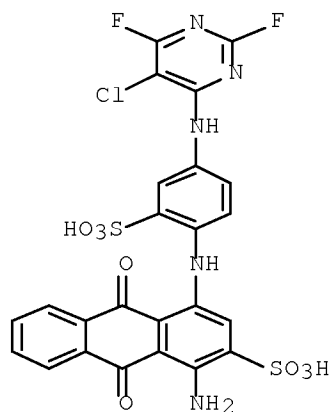
11/628659



●2 Na

RN 70416-86-3 HCAPLUS

CN 2-Anthracenesulfonic acid, 1-amino-4-[[4-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]-2-sulphophenyl]amino]-9,10-dihydro-9,10-dioxo-, sodium salt (1:2) (CA INDEX NAME)



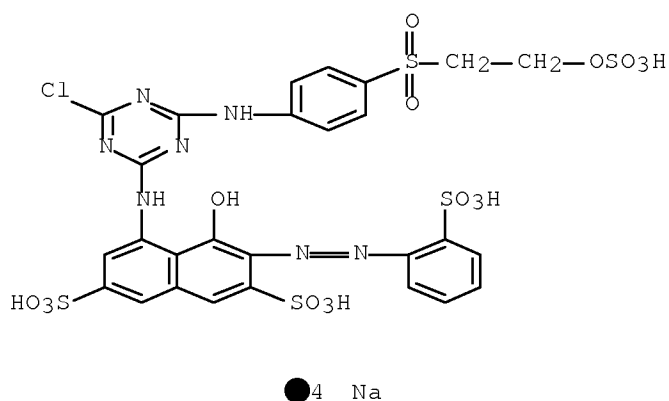
●2 Na

IT 23354-53-2

RL: USES (Uses)  
(dyeing of pigskin by)

RN 23354-53-2 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 5-[[4-chloro-6-[[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-4-hydroxy-3-[2-(2-sulphophenyl)diazenyl]-, sodium salt (1:4) (CA INDEX NAME)



CC 45-2 (Industrial Organic Chemicals, Leather, Fats, and Waxes)  
 ST dyeing pigskin reactive dye  
 IT Process optimization  
     (of dyeing of pigskins, with reactive dyes  
     )  
 IT leather  
     (pigskin, dyeing of, with reactive dyes)  
 IT Dyeing  
     (reactive, of pigskins)  
 IT 2580-78-1 12226-38-9 13324-20-4 70209-99-3  
     70416-86-3 91254-15-8 95145-55-4 95145-60-1  
 RL: USES (Uses)  
     (dyeing by, of chrome-tanned pigskin)  
 IT 23354-53-2 95145-51-0 95145-53-2 95145-56-5 95145-58-7  
     95145-59-8  
 RL: USES (Uses)  
     (dyeing of pigskin by)

L31 ANSWER 24 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 1982:425511 HCAPLUS Full-text  
 DOCUMENT NUMBER: 97:25511  
 ORIGINAL REFERENCE NO.: 97:4459a,4462a  
 TITLE: Dyeing of leather powder, fibers, and  
         articles flocked with them  
 PATENT ASSIGNEE(S): Iizuka, Katsuo, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
         CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
|---|------|----------|-----------------|--------------|
| JP 57047982   | A    | 19820319 | JP 1980-121342  | 19800901 <-- |
| PRIORITY APPLN. INFO.:  |      |          | JP 1980-121342  | 19800901 <-- |
| AB Dyeing with reactive dyes at pH 9.0-13.5 gives good fastness of color. Thus, a flocked article was treated with 1% aqueous glutaraldehyde and dyed with C.I. Reactive Blue 19 [ 2580-78-1] at dye concentration 2%, 40°, and pH 10.5 for 60 min to give dye fastness ranking 5, compared with 2 for dyeing powdered leather with an acidic dye at dye concentration 2%, 60°, and pH 40 for 50 min. |      |          |                 |              |
| IT 2580-78-1 17095-24-8   |      |          |                 |              |

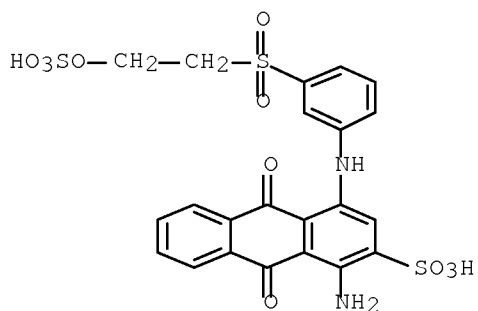
11/628659

RL: USES (Uses)

(dyeing by, of powdered leather)

RN 2580-78-1 HCAPLUS

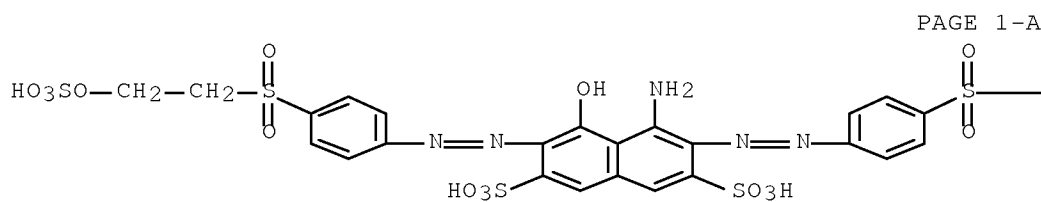
CN 2-Anthracenesulfonic acid, 1-amino-9,10-dihydro-9,10-dioxo-4-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-, sodium salt (1:2) (CA INDEX NAME)



●2 Na

RN 17095-24-8 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3,6-bis[2-[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-, sodium salt (1:4) (CA INDEX NAME)



PAGE 1-A

●4 Na

PAGE 1-B

—CH2—CH2—OSO3H

IC D06P003-32

CC 45-2 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

ST dye reactive powd leather; fiber  
leather reactive dye; flocked article  
reactive dye

IT Leather

## 11/628659

(dyeing of powdered, with reactive dyes)

IT    Flocks  
      (powdered leather, dyeing of, with reactive  
      dyes)

IT    Dyeing  
      (reactive, of powdered leather)

IT    2580-78-1    12225-34-2 17095-24-8    51811-46-2  
      RL: USES (Uses)  
      (dyeing by, of powdered leather)

11/628659

\*\*\*\*\* SEARCH HISTORY \*\*\*\*\*

=> d his nofi

(FILE 'HOME' ENTERED AT 07:46:36 ON 17 APR 2009)

FILE 'HCAPLUS' ENTERED AT 07:46:52 ON 17 APR 2009

E US20070234488/PN

L1 1 SEA ABB=ON PLU=ON US20070234488/PN

FILE 'REGISTRY' ENTERED AT 07:47:21 ON 17 APR 2009

L2 STRUCTURE UPLOADED

D

Uploading L2.str



chain nodes :  
1 2 3 4 5 6 7 8  
ring nodes :  
12 13 14 15 16 17  
chain bonds :  
1-2 1-3 1-4 5-6 7-8  
ring bonds :  
12-13 12-17 13-14 14-15 15-16 16-17  
exact/norm bonds :  
1-2 1-3 1-4  
exact bonds :  
5-6 7-8  
normalized bonds :  
12-13 12-17 13-14 14-15 15-16 16-17

G1:[\*1],[\*2]

Match level :

1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS 6:CLASS 7:CLASS 8:CLASS 12:CLASS  
13:Atom 14:Atom 15:Atom 16:Atom 17:Atom

L3 50 SEA SSS SAM L2

L4 320388 SEA SSS FUL L2

SAVE TEMP L4 HAM659REGL2/A

L5                    STRUCTURE UPLOADED  
D

Uploading L3.str



chain nodes :  
1 2 3 4 5 6 7 8  
ring nodes :  
12 13 14 15 16 17  
chain bonds :  
1-2 1-3 1-4 5-6 7-8  
ring bonds :  
12-13 12-17 13-14 14-15 15-16 16-17  
exact/norm bonds :  
1-2 1-3 1-4  
exact bonds :  
5-6 7-8  
normalized bonds :  
12-13 12-17 13-14 14-15 15-16 16-17

G1:[\*1],[\*2]

Match level :  
1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS 6:CLASS 7:CLASS 8:CLASS 12:CLASS  
13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom

L6                    50 SEA SUB=L4 SSS SAM L5  
L7                    81379 SEA SUB=L4 SSS FUL L5  
                      SAVE TEMP L7 HAM659REGL3/A

FILE 'HCAPLUS' ENTERED AT 07:54:12 ON 17 APR 2009  
L8                    15842 SEA ABB=ON PLU=ON L7  
L9                    106 SEA ABB=ON PLU=ON L8 AND 45/SC,SX  
                      E LEATHER/CT  
                      E E3+ALL  
L10                   25967 SEA ABB=ON PLU=ON LEATHER+OLD,UF/CT  
L11                   52 SEA ABB=ON PLU=ON L9 AND L10  
                      E DYES/CT  
                      E E3+ALL  
                      E E54+ALL  
L12                   6352 SEA ABB=ON PLU=ON "REACTIVE DYES"+OLD/CT

# 11/628659

L13 67221 SEA ABB=ON PLU=ON (DYE# OR DYEING#) (2A) (REACT? OR AZO? OR POLYAZO?)  
 L14 20 SEA ABB=ON PLU=ON L11 AND L12  
 L15 50 SEA ABB=ON PLU=ON L11 AND L13  
 L16 50 SEA ABB=ON PLU=ON L15 AND L10  
 L17 50 SEA ABB=ON PLU=ON L15 AND (LEATHER?)  
 L18 50 SEA ABB=ON PLU=ON L16 OR L17  
 L19 47 SEA ABB=ON PLU=ON L18 AND (AY<2005 OR PY<2005 OR PRY<2005)  
 SEL RN L19

FILE 'STNGUIDE' ENTERED AT 08:05:06 ON 17 APR 2009

FILE 'HCAPLUS' ENTERED AT 08:07:04 ON 17 APR 2009

L20 47 SEA ABB=ON PLU=ON L19 (3A) (REACT? OR AZO? OR POLYAZO?)  
 E REACTIVE DYEING/CT  
 E E3+ALL  
 L21 4291 SEA ABB=ON PLU=ON "REACTIVE DYEING"+OLD/CT  
 L22 7828 SEA ABB=ON PLU=ON REACTIVE (L) DYEING  
 E TANNING/CT  
 E E4+ALL  
 L23 11591 SEA ABB=ON PLU=ON "TANNING (CURING)" +OLD/CT  
 L24 15 SEA ABB=ON PLU=ON L19 AND L21  
 L25 24 SEA ABB=ON PLU=ON L19 AND L22  
 L26 24 SEA ABB=ON PLU=ON L24 OR L25  
 SAVE TEMP L26 HAM659HCAP/A  
 SEL RN L26

FILE 'STNGUIDE' ENTERED AT 08:11:34 ON 17 APR 2009

FILE 'REGISTRY' ENTERED AT 08:13:20 ON 17 APR 2009

L27 370 SEA ABB=ON PLU=ON (2494-89-5/BI OR 17095-24-8/BI OR 108-77-0/BI OR 2580-78-1/BI OR 2494-88-4/BI OR 25711-72-2/BI OR 88-63-1/BI OR 90-20-0/BI OR 108-45-2/BI OR 110-16-7/BI OR 110-17-8/BI OR 145017-98-7/BI OR 174491-68-0/BI OR 3029-64-9/BI OR 41261-80-7/BI OR 59-67-6/BI OR 675-14-9/BI OR 68-11-1/BI OR 6915-15-7/BI OR 697-83-6/BI OR 71902-16-4/BI OR 77-92-9/BI OR 10139-51-2/BI OR 102-01-2/BI OR 103-69-5/BI OR 104256-91-9/BI OR 105936-66-1/BI OR 105956-68-1/BI OR 106-50-3/BI OR 106003-92-3/BI OR 1064-48-8/BI OR 107-15-3/BI OR 107143-06-6/BI OR 108-05-4/BI OR 108-31-6/BI OR 108-46-3/BI OR 109-01-3/BI OR 109-55-7/BI OR 109-76-2/BI OR 109295-78-5/BI OR 109295-80-9/BI OR 110-60-1/BI OR 110-85-0/BI OR 110-91-8/BI OR 1102416-75-0/BI OR 1102416-76-1/BI OR 1102416-77-2/BI OR 1102416-78-3/BI OR 1118-68-9/BI OR 112-34-5/BI OR 115662-23-2/BI OR 115682-09-2/BI OR 118-03-6/BI OR 118739-29-0/BI OR 119-18-6/BI OR 119-70-0/BI OR 121-57-3/BI OR 12217-14-0/BI OR 12217-18-4/BI OR 12218-96-1/BI OR 12218-97-2/BI OR 12218-98-3/BI OR 12219-09-9/BI OR 12224-60-1/BI OR 12225-34-2/BI OR 12226-38-9/BI OR 12236-86-1/BI OR 12238-86-7/BI OR 123-81-9/BI OR 124-09-4/BI OR 124363-59-3/BI OR 131733-83-0/BI OR 1326-82-5/BI OR 1326-83-6/BI OR 13269-73-3/BI OR 13324-20-4/BI OR 135151-05-2/BI OR 135162-58-2/BI OR 135162-59-3/BI OR 135162-60-6/BI OR 135162-61-7/BI OR 135162-62-8/BI OR 135162-63-9/BI OR 135162-64-0/BI OR 135162-65-1/BI OR 136074-14-1/BI OR 138081-66-0/BI OR 139261-22-6/BI OR 140876-11-5/BI OR 140876-15-9/BI OR 142279-62-7/BI OR 143354-19-2/BI OR 144-55-8/BI OR 144637-34-3/BI OR 146578-98-5/BI OR 147-81-9/BI OR 149124-57-2/BI OR 149124-58-3/BI OR 149124-59-4/BI OR 149124-60-7/BI OR 149124-61-8/BI OR 149124-62-9/BI OR 149124-63-0/BI OR 149124-64-1/BI OR 149124-65-2/BI OR 149124-66-3/BI OR 149124-67-4/BI



**11/628659**

L28            267 SEA ABB=ON   PLU=ON   L27 AND N/ELS

FILE 'HCAPLUS' ENTERED AT 08:14:20 ON 17 APR 2009

L29           209186 SEA ABB=ON   PLU=ON   L28

L30           24 SEA ABB=ON   PLU=ON   L26 AND L29

L31           24 SEA ABB=ON   PLU=ON   L26 OR L30

SAVE TEMP L31 HAM659HCAP/A

FILE 'STNGUIDE' ENTERED AT 08:17:26 ON 17 APR 2009

D QUE L31

FILE 'HCAPLUS' ENTERED AT 08:18:47 ON 17 APR 2009

D L31 1-24 IBIB ABS HITSTR HITIND

FILE 'STNGUIDE' ENTERED AT 08:19:21 ON 17 APR 2009